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APR/2017

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*Preproduction model shown throughout.
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1.5L Turbo GM-estimated **31 MPG hwy**¹

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2018 EQUINOX

VS. 2017 TOYOTA RAV4 & 2017 FORD ESCAPE

Vehicle	'18 Equinox	'17 RAV4	'17 Escape
Available Diesel Engine	YES	NO	NO
Android Auto™ ² / Apple CarPlay™ ³ Compatibility	YES	NO	YES
Available Heated Rear Seats	YES	NO	NO
Available OnStar 4G LTE Wi-Fi® ⁴	YES	NO	NO
Available Surround Vision	YES	YES	NO



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¹ EPA estimates not yet available. Based on GM testing. ² Vehicle user interface is a product of Google and its terms and privacy statements apply. Requires the Android Auto app on Google Play and an Android compatible smartphone running Android 5.0 Lollipop or higher. Data plan rates apply. Android, Android Auto, Google, Google Play and other marks are trademarks of Google Inc. ³ Vehicle user interface is a product of Apple and its terms and privacy statements apply. Requires compatible iPhone and data plan rates apply. Apple CarPlay and iPhone are trademarks of Apple Inc. ⁴ Requires a compatible mobile device, active OnStar service and data plan. 4G LTE service available in select markets. Visit onstar.com for coverage map, details and system limitations. Data plans provided by AT&T.

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25 CARS WORTH WAITING FOR

Our annual guide to the most compelling vehicles automakers will bring to market over the next four years.

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ONE-CAR WONDERS

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by Aaron Robinson

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2015 TESLA MODEL S P85D

Witnessing change in 36,000 miles, plus one really long road trip.

by Eric Tingwall

On the Cover

Twelve percent of the cars worth waiting for.

photography by

James Lipman,

rendering by

Radovan Varicak

Car and Driver[®] vol. 62, no. 10

In this Issue:

“If you like—or can simply get past—the Civic’s looks, you’ll find a touch of genius here, a flash of the old Honda.”

—AARON ROBINSON, “ONE-CAR WONDERS”

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2017 LAMBORGHINI AVENTADOR S

Lambo teaches its biggest bull to dance. CarandDriver.com/AventadorS

2017 TOYOTA COROLLA AUTOMATIC

Yes, it's still that boring. CarandDriver.com/2017Corolla

2017 CHEVROLET COLORADO V-6 EIGHT-SPEED AUTOMATIC

A welterweight now packs a bigger punch. CarandDriver.com/2017ColoradoV6

2017 PORSCHE 718 BOXSTER PDK

Base in name (and four angry cylinders) only. CarandDriver.com/718BoxsterPDK

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Backfires: The joyful noise of the commentariat, rebutted sporadically by Ed.

ALL OUR BEST

Congratulations on the January issue. It is well conceived and beautifully written, building page by page to the big reveal, then closing with the delightful Fake Elon Musk interview. Perhaps the best issue I've seen in my 50 years as a subscriber.

—Alec Pendleton
Cleveland, OH

This is the worst 10Best issue ever, and I have them all right from the very beginning in 1983.

Where are the stats charts in the comparison articles? Is this the way it's going to be, picking my way through wordy text overloaded with metaphors just to find zero-to-60-mph times, quarter-mile and fuel-mileage stats? And what's with this 10Best judging? Has *Car and Driver* become the "safe space" for cars that don't cut it? Does everyone get a trophy for participating?

—Tom Gatchell
Prescott, AZ

I have been a subscriber since June of 1975 and have read virtually every issue, cover to cover. I have seen many format changes over the years, some for the

better and some for the worse. The January 2017 10Best issue is an atrocity. It is the Pontiac Aztek of magazine formatting. I am tempted to cancel my subscription, but I'll give you until February. One more issue with this unreadable screaming/shouting/chopped-up psychopathic format and I will be out.

—David Riese
Windham, NH

I don't care what that guy ↑↓↔ said. The new 10Best format rules.

—C. Benjamin Whalen
Issaquah, WA

Let me say that this is by far one of the best, if not *the* best 10Best issue, and I've read them all. What I truly



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10BEST CARS
ISSUE IS SO
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DOWN."**

◀

loved this time around was the set of mismatched comparisons that could keep some of the high-end machines honest. The whole debate around how much of a car's performance one can use... the Honda or Mazda or VW won't have all four wheels desperately trying to maintain traction like a Mercedes-AMG C63 at all four corners during acceleration. Balance, poise, and confidence can be more fun than all-out numbers or Nürburgring lap times.

—Michael Lipman
Montreal, QC

Your 10Best Cars is an interesting assortment. "10Best Cars for Single People" may be a better title. Just which one of your cars could fit my two teenage sons in the back seat? Not

one mid-size or large four-door could be found.

—John Kidd
Richland, PA

**You missed the
Honda Accord—Ed.**

Like your January 2017 issue header, "The Year In Review: 2016, Mercifully Over," that's exactly how I felt as I thumbed through the magazine. I can honestly say not one article interested me, and I've been reading *Car and Driver* since it was *Sports Cars Illustrated*. Not all is lost, some of the advertisements were pretty good.

—Rick Sandelli
Rehoboth Beach, DE

Your 10Best issue was so compelling, I read it all in one evening! Excellent logic on what makes a car a 10Best and why the

others did not make it. When a Chevy Camaro and an Accord are better than a Mercedes, that is an achievement for cars that most readers can afford. And your witty writing, irreverence, and sense of humor ("premature ejeepulation") are far more entertaining than the other serious and sometimes effete auto magazines.

—Peter Madison
Princeton, NJ

I like looking at interior pictures of the cars. I care much more what the inside looks like than the outside. When you log 30,000 miles yearly in the same one, this tends to happen. And yet, not a single interior shot through the entire issue.

—Caz
Manhattan, KS

As always, *Car and Driver's* 10Best Cars issue is so riveting that it is virtually impossible to put down. Alas, once again Lincoln and Cadillac are practically nonexistent. It's sad how embarrassing these brands have become in comparison with

the Germans, the Japanese, and now even the South Koreans. What has happened to Detroit? Of course, Detroit trucks will never be beat, but Detroit cars, particularly the luxury brands, are so beyond salvation that they have become utterly dismal. Lincoln's pathetic attempt at greatness by reviving the Continental name is much too little, too late. Cadillac can pump all the power it wants into its cars, but the brand is just plain lackluster and moving it to New York is nothing more than a last-ditch effort to give the brand some credibility. Dump the two brands, I say, and quit the bloodletting.

—A.J. Buttacavoli
Oakland, CA

Don't count Cadillac out yet; its cars have made the list in recent years. And we were eager to get our hands on a Continental for our test, but Lincoln couldn't provide one in time—Ed.

Why was the Infiniti Q60 not even included as a competitor in your 10Best issue? Reviews have been

**"I LIKE
LOOKING AT
INTERIOR
PICTURES OF
THE CARS ...
AND YET,
NOT A SINGLE
INTERIOR
SHOT
THROUGH
THE ENTIRE
ISSUE."**



Editor's Letter:

We are often accused of focusing too unrelentingly on minutiae at the expense of the bigger picture. Indeed, we are terriers on a rat when it comes to the nuances of a car's brake modulation, damping refinement, and steering feel. With cars these days, the story is in the details, especially when it comes to that last one.

We have been mostly merciless in our judgments against the new wave of hyper-efficient electrically assisted power-steering (EPS) units, bemoaning the way they sever and cauterize the nerves that, in unpowered or hydraulically assisted steering, reached from the steering-wheel rim all the way down to the front-tire treads. This is steering "feel," as opposed to "steering weight" or "response," both of which EPS does quite well. It's much easier to program a perfectly linear steering-response curve in software; it's a black art to do so with hydraulics. But it's feel that really matters.

Why? Often, we harp on steering numbness when we discover it in high-performance cars. We frequently pine for the way the "old one" steered, especially at the limit of tire adhesion, because it gave drivers ample information about the tires' on-again/off-again relationship with the pavement. With the ubiquity of EPS, we've had to recalibrate our rear ends to feel the first twitches of drift angle, but if a given car doesn't speak clearly through its chassis, we're often in the weeds, figuratively and literally. All for the 1-mpg savings (and programmability) that EPS affords.

But I would submit that steering feel, as important as it is in keeping a Ferrari unacquainted with a guardrail, is even more crucial in the crossovers, trucks, and SUVs that 60 percent of us are now buying in the hope that they'll protect us from the Big Awful.

My elder daughter just turned 15 this winter, giving her ample opportunity to exercise her learner's permit on snowy roads. And as astute and brilliant as she undoubtedly is, I watch her reactions when the front end of the SUV she's driving washes out on slick surfaces. She never feels it coming, never modulating her speed or steering to react to evaporating grip. So I worry.

That's why details such as steering feel matter, even if we often get all super-geeky and/or macho about it.

—Eddie Alterman



good to great, yet it's not even mentioned. What's up?

—Lisa Clune
South Amboy, NJ
We asked, but the Q60 wasn't available in time—Ed.

THE ASSASSIN

I remember vaguely when Brock Yates left the pages of *Car and Driver* and how many times, whether in head or heart or pen, I wished to have sent a letter to the editor and cried: "Where's Yates?" But I never yielded to that temptation and now lament not doing so. Thank you, John Phillips, for your remembrance ["We Remember," January 2017], for I also remember Brock well. (And I use the word "well" in all of its connotations.)

—Chuck Greci
Mount Pleasant, SC

Your tribute to Brock Yates reminds me why I cling to my few remaining print-magazine subscriptions—the serendipity of stumbling upon a story too big for the smallness of our mobile-crazed attention spans.

What a treat. Succinctly written, wonderfully immortalized. Yates's storytelling—and Phillips's excellent treatment of it—reminds me that readers will always invest their complete attention and time for writing capable of suspending time and place.

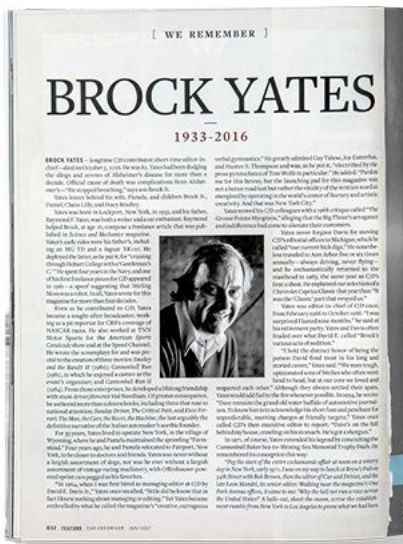
—John Baker
Duluth, MN

It is entirely fitting that Brock Yates's

obituary appeared in the 10Best issue. He was one of the best. I read "The Grosse Pointe Myopians" when I was 13 years old, and it made an indelible imprint on the way I think about the car industry and in the way I studied American business institutions. I also loved the random references to his Dodge Challenger in *C/D* over the past 44 years. Thank you, Brock.

—Paul F. Alphen
Westford, MA

Thank you for the coverage of Brock Yates in the January issue. He was the reason I first subscribed to *C/D* as a kid in the late 1960s, leaving other car magazines of the muscle-car days behind. Keep his writing legacy alive and you'll hold on to your older readers and win new ones. As the internet and tech transform publishing, good writing is the best path to holding our attention in the onslaught of clickbait



Explained: Inline-fives, engine balance, and the power of numbers

As a mechanical engineer who never designed an engine in his life, I don't get the five-cylinder engine. It's been said that the five has the power of a four, the mileage of a six, and the NVH of a blender full of nuts and bolts (okay, I made up that last part). But why start with something that is inherently unbalanced? Why go into something you know will take hundreds of widgets to make run right? Acura, Audi, Volkswagen, and Volvo all offered fives. It's like that statement about the F-4 Phantom being proof positive that if you get a big enough engine, a brick will fly. Help?

—Ken Morgan, Fountain Valley, CA

The marketers would tell you that you have it backward, Morgan, that an inline-five delivers the power of a six, the fuel economy of a four, and the NVH of a rocking chair on a waterbed (yeah, we made that up, too). Either way you say it, it's wrong, though. A properly designed five-cylinder produces the power, fuel economy, and vibrations of a five-cylinder.

You should know that inline-fours and V-6s—the most likely substitutes for an inline-five—aren't perfectly balanced, either. Large-displacement four-cylinders typically use two balance shafts rotating in opposite directions at twice the speed of the crankshaft to quell vertical shaking forces. A single balance shaft addresses the end-to-end rocking of a V-6. Flat- and inline-sixes and 60-degree V-12 engines are the only common engine configurations that are inherently balanced.

The inline-five's imbalance rocks the engine in the vertical plane. Counterweights at either end of the crankshaft cancel out the first-order oscillations (which occur at the same frequency as the engine speed), while the second-order motions (twice the frequency of engine rpm) are typically damped—but not eliminated—by the engine mounts.

The appeal of the five-cylinder engine is largely a matter of packaging. Note that most five-cylinder engines are installed transversely in the engine bay; they're often used where a V-6 is too wide and an inline-six too long. Plus, the marketers know the power of numbers—five is greater than four. —Eric Tingwall



“YATES'S STORYTELLING ... REMINDS ME THAT READERS WILL ALWAYS INVEST THEIR COMPLETE ATTENTION AND TIME FOR WRITING CAPABLE OF SUSPEND- ING TIME AND PLACE.”

and thinly veiled rewrites of manufacturers' press releases.
—Paul Bingham
San Marino, CA

The magazine arrived today, and of course I immediately sat down to read a bit. I know I'm going to read it cover to cover, so most of the time I just start with the letters and work my way to the back cover. This time I checked the table of contents, and I saw that Brock Yates had died. He was one of the writers who hooked me back when I read the magazine in my high-school library, so reading

those pages became a priority. Great job bringing those memories back.

Much appreciation for John Phillips. I reread his memorial to Larry Griffin just now. I hope Phillips is around to write Pat Bedard's as well (and that Phillips is 120 or so when he does it). Tell Phillips I'm buying if he'll meet us during our next trip to Montana.

Also, if there is a favorite place for Mr. Yates, like the Larry Griffin bench in Gardiner, Montana, please share it with your readership. I make it a point to sit

for a few minutes whenever we visit Gardiner. Maybe next time I'll starch my Levi's. I keep forgetting that part. R.I.P., Brock.

—Mark Brandt
Newport, WA

Thanks for your Brock Yates tribute. "The Best of Brock Yates" was a nice appetizer that left me hungry for a main course. Is there any chance that you would reprint "The Grosse Pointe Myopians"? After nearly 50 years, his 1968 perceptions would still be acute.

—Mark Nahmias
San Tan Valley, AZ

I found John Phillips's January article quite interesting. As it turns out, Mr. Yates's first article for *Car and Driver* ("Technical Report: Moss Mark III") was also the first article I ever read in a car magazine. I would have been 11 years old and bought my first car magazine (*C/D*, June 1961) because of the picture of the (then) new Jaguar XK-E on the back cover. It cost me two weeks' allowance. Leafing through the pages, I found the Moss article. At 11,

I didn't quite understand parody, but that made it all the more fascinating.

In 1980 I was in Detroit for the political convention. A co-worker and I went cruising on our day off, and we happened upon Grosse Pointe. Seeing the mansions, I remarked, "This must be where the myopians live," prompting a fairly lengthy explanation to him. Though I remembered both articles fairly well throughout my life, I never realized Mr. Yates penned both of them until today.

Thank you for the June 1961 issue that started me on a lifelong love of Jaguars and Brock Yates's eloquent compositions.

—Tim George
Mahwah, NJ

Your tribute to Brock Yates brought back many great memories about growing up with *C/D* and irreverent, immature, and exciting adventures like the Cannonball Run. With Brock, it was about cars, but the context was always the love of motoring, racing, and get-your-hands-dirty

adventure. He was very much the progenitor of today's *Top Gear* and *The Grand Tour*. Clarkson, May, and Hammond owe him homage and perhaps royalties! Brock made it all possible.

—Peter M. Caya
Scio, NY

Brock Yates made Jeremy Clarkson look like Mother Teresa.

—Mark A. Markarian
Pleasantville, NY

VETTING PROCESS

The one that allowed the Chevy Corvette Grand Sport on page 055 of the January issue with the gas door on the passenger's side belongs in the basket of deplorables ["The Challengers," January 2017]. Was that you, Ed?

—Dave Smith
Mosinee, WI

At least it's the right shape, Smith—Ed.

I recently received the January issue and couldn't wait to read "Mano a Mano" putting the Corvette Grand Sport and the Ford Mustang Shelby GT350 side by side. Both are gorgeous and both deserve to be included on the 10Best Cars list.



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However, as the driver of a 2016 Corvette Stingray, I am a little confused about the outward-visibility pictograph. It shows zero rearward vision in the Corvette. Having seen many a Mustang in my rearview mirror, I can say that the view out the back is just fine.

—Rob Powell
Pickering, ON

To measure outward vision, we spin a laser positioned where the driver's eyes would be located. The Corvette's fixed headrest prevents us from measuring where the rear pillars actually block rearward vision—Ed.

ON BASE

In the 10Best article, you state, regarding the Mercedes-Benz: "The sublime ride of the E300 is coupled with a bewildering array of safety and auto-driving stuff that will confuse drivers" and "It delivers the Mercedes promise of technological superiority in a richly appointed package" ["The Challengers," January 2017]. You go on to state that the base price is \$53,075. I checked the website and checked a few boxes for "safety and auto-driving stuff" and some boxes for "technological superiority" and easily came up with a total of \$65,000. Why do you describe a prize bull and give the price for a skinny pig?

—Derrick
Simi Valley, CA
We like ham—Ed.

BOLT ON

On page 080 of the January 2017 issue ["Charge!"], Mike Duff writes of the Chevy Bolt, "You can pretty much whale on it and still expect 180 miles from the e-tank." Does he mean "whale" as in, "You go distract those Norwegians while I save that whale," or "wail" as in, "Those cats I saw in the jazz club last night can wail"? I'm asking because I've never read the word whale used as anything but a noun referring to the mammal. I also find it amusing that I'm asking this in the edition that pays tribute to the master of vocabulary, Brock Yates, who[m] I enjoyed for years. Don't worry; I'm not threatening to cancel my subscription.

—Paul Moots
Fowlerville, MI

No, he meant whale, as in "to beat, whip, thrash," as Captain Ahab would be quick to remind you—Ed.

FOURGASM

Sound matters ["Fours to Be Reckoned With," January 2017]! It is a major part of the driving experience. The loss of "the stirring intake and exhaust notes" is more than tragic. It is unacceptable in such pricey cars. I love a turbo when I hear it in a diesel truck, where it belongs. It does not belong in a four that is replacing the incredible Porsche flat-six. Putting that six in front of the rear axle had made the Boxster/Cayman a truly great Porsche.

With the four, it just can't be the same.

—Richard Vaught
New Market, VA

THE BELL TOLLS

Regarding "Taco Bell Fantasies" [January 2017]: It would appear that you inadvertently left out what would be the most complementary pairing of all—dropping the GT350's Voodoo 5.2-liter V-8 into a Dodge Dart to produce the euphoni-ously named "Shart."

Ah, who am I kidding? It would still be a crappy car. It'd probably leave awesome skid marks, though. And it would be a step up from the Ford twin-turbo 2.7-liter/Dart combo (otherwise known as a Fart).

—Dave Lesack
Kelowna, BC

UNVERIFIED

The January 2017 issue had an inter-



view with the Fake Elon Musk that was neither humorous nor the least bit informative ["What I'd Do Differently"]. Please go back to using real people who have something interesting to say. Kudos to all of you for putting out the best car magazine there is.

—Bil Butts
Huntington Beach, CA
I like Bil Butts and I cannot lie—Ed.

After reading the Fake Elon Musk interview, I urge you to immediately have a qualified maintenance technician check the carbon-monoxide detector in the C/D office for possible malfunction or tampering.

—John Polniaszek
Palm Coast, FL

Good idea. I'll get right to it after I take a nap in the cornerrrrrrrrz

Ran out of people to interview already?

—Mark Newman
Houston, TX

WAY BACK

I have to take issue with the letter in January ["Backfires"] asking Alterman when he might step down. I find it appropriate for the part of "Ed." to finally be portrayed by a real, live Ed. At least I think he's both real and live.

—Rich Foley
Fayette, OH

Who is this Alterman guy I keep reading about?—Ed.

The six-column format for Backfires that started with the redesign in July of last year is bothersome to read. It

reminds me of the old Burma-Shave road signs. Read a few words and skip to the next line. Read, skip, refocus, recall, etc. I dislike it enough that I will not be renewing my subscription, even at the \$6 price. If I can't read it, why receive it?

—Rich Flemming
Rochester, NY

You guys have been resting on your laurels. Gone are the heady days where at least a half-dozen readers would cancel every month. I was starting to wonder if you had hired the head censor from *Consumer Reports*. In days of yore, you would intentionally bait your readers to get them worked into a froth. Nothing sells a magazine like a frothy reader. I was thinking I might have to cancel my subscription and look elsewhere for a little froth. And then came the letters about the "O Ca-na-da!" Honda Ridgeline feature. Wow. Four cancellations off one little line. Good work. I guess I'll give you another try.

—David Crockett
Houston, TX

Letter of the Month:

—
What is the point of wasting 14 lines of print on a person's résumé to answer a simple five-line question, "Do you use the same driver (your fastest) to extract each car's flyer lap?" ["Backfires," January 2017]. It doesn't have any effect on the question or answer. By the way, I was a circus clown, a male dancer, a one-handed surgeon, a blind doctor, and I'm now a writer for *Car and Driver*.

—Shawn Groom
Palatine, IL

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001

002

Reveal of the Month

STRANGER THINGS

AUDI, LIKE BENZ BEFORE IT, CHASES AN ODD BMW. *by Alexander Stoklosa*

WITH THE DEBUT OF THE Q8 CONCEPT, Audi becomes the second lemming to chase BMW's ungainly X6 coupe/SUV over the edge of vehicular reason. Mercedes recently took the same plunge with the GLE and GLC coupes, and we've scratched bald spots into our heads mulling the logic of bulky SUVs with a lot of the useful space hacked out of them. Yet more keep appearing. Maybe it's because they're not hard to make. To generate the Q8, Audi will simply scalp the mainstream Q7 down to its running gear. The stylists handle the rest.

▼ EXTERIOR

Exterior designer Andreas Mindt describes the Q8 concept as four door handles and a rear window wiper away from the actual production Q8 headed to showrooms next year. Next to its steroidal, hunchbacked peers from BMW and Mercedes, the upright Audi looks a bit more dignified, deriving presence from

001

The X-shaped headlight accents will spread to other Audis equipped with laser headlights. Oh yeah, the Q8 has laser headlights.

002

Audi plans to proliferate the Q8's eight-sided grille to its other SUVs. Car models will keep their six-sided openings.

its size more than anything. Mindt insists that was intentional, adding, "We have to go our own way."

We like to think of the Q8's restrained yet amply embroidered design language as "baroque minimalist," a pseudo-architectural term we just totally made up. The Q8's simple two-box shape and fairly conventional roofline demonstrate the clean part of the aesthetic, as does its lack of haunches stretching wide over the rear tires to denote earth-moving rear-drive muscle, as on the X6.

Close up, though, the Q8 has uncharacteristically heavy-handed details. Even without exactly upending decades of Audi's



MIND THE GAPS

BRING UP ALUMINUM PANEL STAMPING RADII TO AUDI'S ENGINEERS, AND THEY'LL GUSH ABOUT THE Q8'S EXTREMELY TIGHT 2.5-MILLIMETER CREASES, ALLEGEDLY 5.5 MILLIMETERS TIGHTER THAN COMPETITORS' BENDS. AUDI ENGINEERS ARE POPULAR AT PARTIES.



design restraint, the multiple hood strakes, body creases, and new eight-sided grille with yawning vertical spears present as jarring disruptions. Taken in full, the Q8 awkwardly straddles Audi's minimalist roots and the in-your-face impact the coupe/SUV segment demands. Musing over the ur-Quattro that inspired the Q8, Mindt declared that the rally coupe "isn't a beauty, but it is strong." We'd agree that that just about sums it up.

▼ CHASSIS AND POWERTRAIN

Peek under the Q8's aluminum skin, and you'll get a glory shot of the Q7's mostly steel undercarriage and structure. The VW Group's modular MLB Evo platform situates all of the longitudinally oriented engine ahead of the front axle, forcing the body's front-drive proportions.

Still outrunning the public relations' fumes from its diesel snafu, Audi put its

001

The rear door skins undergo multiple stampings to achieve the delicate chamfers along their top and bottom edges and the deep section near the rear-wheel cutout.

002

Inspired by the '80s ur-Quattro coupe's box flares, the Q8's shoulders add 2.9 inches of width relative to the Q7. Other flourishes inspired by the rally icon: the black panel spanning the tailgate, the chunky D-pillar shape, and the thin cooling slots just above the grille.



e-tron plug-in-hybrid powertrain into the Q8 concept. A gas-fueled, turbocharged 333-hp V-6 drives all four wheels via an eight-speed automatic with an integrated 134-hp electric motor/generator. Total output is 443 horsepower and 516 pound-feet of torque, and a lithium-ion battery under the trunk floor delivers up to 37 miles of electric-only driving. Expect a similar e-tron setup along with a range of gasoline V-6 and V-8 engines for the production Q8. A sporty RS Q8 iteration might appear, bearing a 500-plus-hp twin-turbo V-8.

▼ INTERIOR

Audi is losing its knob—it's ubiquitous MMI center-console knob, that is. As on the outside, most everything inside the Q8 concept will carry over to the production version. A stack of touchscreens will succeed the MMI controller, with the upper unit handling music, navigation, and communication functions and the lower display dedicated to climate controls. The reconfigurable digital gauge cluster proliferating throughout Audi's lineup brings the display count to three.

Finicky capacitive-touch controls have negatively colored our reviews of similarly digitized Cadillac interiors, so here's hoping the touch-only interfaces work as well as they look. Ditto the large central vent, which lacks any obvious physical controls. Mindt's eyes twinkled when we asked whether Audi plans to build on the air-vent innovations in the TT sports car, but he declined to elaborate. Expect something special.

The rest of the cabin is pure Audi, with an architectural feel and premium materials. Both four- and five-seat configurations will be offered from the outset, proving that Audi learned something from BMW's X6 teething. Or maybe not.



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BRINGING THE 'SHINE BACK

MONSTER ENERGY IS NASCAR'S NEW TITLE SPONSOR. GOODBYE, OLD AND WHITE; HELLO, PIERCINGS AND TATTOOS.

by Josh Jacquot

MONEY, MONEY, MONEY, MONEY

Neither Monster Energy nor NASCAR will reveal the terms of their new deal except to say that it is a multiyear commitment. William Chipps, a senior content editor at IEG Sponsorship Report, a Chicago-based analytics firm that tracks corporate sponsorships, estimates the deal to be worth \$20 million annually plus an activation commitment (spent on pre-race shows, athletes, etc.). Monster will retain its twofold sponsorship of the Stewart-Haas Racing Ford Fusion driven by Kurt Busch, contributing both to the team and the driver. Estimates put that sponsorship at \$15 million to \$20 million annually, making the cost to support a single car and driver through the season comparable to the cost of branding the entire series.



ADMIT IT, you like watching a good face punching. We all do. Monster Energy thinks we like it as much as we like NASCAR.

Monster is the new entitlement sponsor of NASCAR's premier racing series, now known as the Monster Energy NASCAR Cup Series, and it's bringing its own brand of entertainment to the races beginning this year. That includes the possibility of freestyle motocross, gymkhana, off-road demos, and yes, even mixed martial arts fights in the pre-race show.

"We built our brand on doing things people think are cool," says Mitch Covington, Monster Energy's vice president of sports marketing. "That won't change here." Americans, evidently, think caged combat is as cool as a three-car-wide,

BUZZ BLOCKER

NASCAR WILL PROHIBIT NEW ENERGY-DRINK SPONSORS FROM ENTERING THE SERIES BUT WILL ALLOW GRAND-FATHERED-IN DEALS, SUCH AS THE EXISTING 5-HOUR ENERGY SPONSORSHIP OF ERIK JONES, TO REMAIN INDEFINITELY.

200-mph territorial dispute. And because Monster brings with it MMA athletes such as Conor McGregor and Dominick Cruz—respected face pummelers, both—there's likely to be action of all sorts at NASCAR events this year. It's a match that could only be made in, well, America. God bless us.

A rear-naked choke or arm bar are far cries from prior title sponsors' sideshows, which once included longtime sponsor R.J. Reynolds handing out cigarettes (relax, they checked IDs). NASCAR can use the boost. With both event attendance and TV ratings down in recent years, NASCAR, on some level, is searching for a new identity. "For us this is about giving NASCAR customers a lifestyle experience, not selling a

product," says Covington. Monster plans to capitalize on the sponsorship with display rigs at events that transform into fan-friendly entertainment facilities for hosting attendees, Monster's sponsored athletes, and, of course, the Monster girls.

NASCAR, for its part, admits that a change won't hurt. "This is a bit of a throwback to NASCAR's maverick outlaw roots. It's not vanilla," says Steve Phelps, NASCAR's executive vice president and chief global sales and marketing officer. "Monster has been given permission to be edgy and disruptive."

Though Phelps insists that the Monster partnership will help NASCAR serve all its fans, appealing to a younger audience can't be a bad thing. "There's a perception out there that we're just old and white," says Phelps. He points out that the spectator base is more diverse than many think, but that it's not enough. "We attract more millennials and Hispanics by a factor of five or six than Major League Soccer," he says. The search for a new sponsor spanned 18 months and involved more than 200 worldwide companies before NASCAR settled on Monster. According to Phelps: "There are brands that would have paid us more, but they lacked the right fit."



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Wheelmen

HOG CALLING

THE FORD F-SERIES' CHIEF DESIGNER ON MOTORCYCLES, PICKUPS, AND THE IMPORTANCE OF FUNCTION. *by Jared Gall*

GORDON PLATTO JOINED FORD more than 25 years ago and has worked as a designer on everything from minivans to the Mustang. Since 2011, he's been the chief designer for the F-series and the Explorer. Away from the office, he turns his eye to vintage motorcycles, with a collection that currently includes the 1948 Indian and the 1931 Harley-Davidson pictured here, as well as a 1978 Kawasaki KZ650, and more.

C/D: You've certainly got the ends of the size spectrum covered.

[GP:] Trucks and motorcycles seem to go together. A lot of the people we get rotating through the studio either have a motorcycle when they come in or end up having one when they leave. Willie Davidson [the former head of design for Harley-Davidson] actually did an internship at Ford. He was always a hero of mine, and through the Ford/Harley alliance, we became good friends. We've ridden to Sturgis together. After he retired, one of the guys who used to work for me on trucks, Brad Richards, took over Willie's position at Harley-Davidson.

■ What draws you specifically to older bikes?

☐ They're a lot of fun because everything's so mechanical. You can

hear which gear you're in. They [the Indian and the Harley] both have foot clutches on the left, but the shifters are on opposite sides. They both have the spark advance on the same side as the shifter, and the throttle on the opposite. They're archaic, but it becomes second nature. You just gotta remember which one you're on. And they're six volts, so when it's dark, it's dark. It feels as if you're running around with a candle.

I like the appearance, too. I like the fact that they look mechanical and things aren't covered up. We did that on the Raptor. We pulled the bumpers up as high as we could to really expose the suspension. I like how, with the bikes, the way they go together is inherent in the way the design is executed. Understanding how stuff works and how it goes together helps me design better. To me, there's inherent quality in the way things were put together in the past.

■ But a big part of that perception is left, which is the antithesis of modern automotive design.

☐ Yes, but there are other ways to convey that mechanical feel. The Raptor's paddle shifters are magnesium. Magnesium feels cold to the touch. It feels like quality, it feels different than plastic. It's not going to flex like plastic does when you touch it. The better designers really understand how things go together and the mechanical nature of things versus someone who is just styling.



MUSEUM PIECES

Platto has thousands of pieces of motorcycle memorabilia in his home. The Harley-Davidson museum has even done a photo shoot with his collection because he has some items even it doesn't have.

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SEBRING TURNED AN ARMY AIRFIELD INTO AN INTERNATIONAL RACING INSTITUTION.

by Csaba Csere

NO AMERICAN ROAD-RACING TRACK resonates with as much history as Sebring. The Florida track's first race, a six-hour enduro on a makeshift course marked with hay bales, happened on the last day of 1950. Less than two years later, the track hosted the first 12 Hours of Sebring, the race that undeniably made it famous. With one exception, the 12 Hours has run every year since, most often as part of whatever prevailing international sports-car championship was in place. Even when it wasn't part of a series, though, Sebring attracted top-flight international teams that regarded its rugged pavement and hot weather as good durability testing for the 24 Hours of Le Mans. Winners have ranged from Fangio to Foyt to Fittipaldi, Gendebien to Gurney to Gregg, Moss to McLaren to McNish—just about every post-World War II racer of note. It's a cathedral of American motor-sports and currently runs a variety of events ranging from the 12 Hours to various SCCA and NASA races, and even a ChumpCar event. So there's a reasonable opportunity for any of us to race where many motor-sports legends have jockeyed their mounts.

HISTORY

Shortly after World War II, aeronautical engineer, businessman, and MIT grad Alec Ulmann was looking for a place to pursue his idea of transforming surplus military planes into civilian aircraft. About 90 miles south of Orlando, smack in the middle of the Florida peninsula, he found the former Hendricks Field, where B-17, B-24, and B-29 crews trained during the war.

Ulmann soon converted the facility's runways, taxiways, and connecting roads into a racing circuit. The layout used for the first race had 12 turns and measured 3.5 miles. By the running of the inaugural 12 Hour race, a new configuration added five turns and increased the length to 5.2 miles.

Though dead flat, the circuit was very challenging. The various roadways were confusing at night, and many of the turns had limited runoff. In the '66 race, after one crash killed a driver and another, involving Mario Andretti, killed four spectators, the organizers altered the track to create more room for off-course excursions.

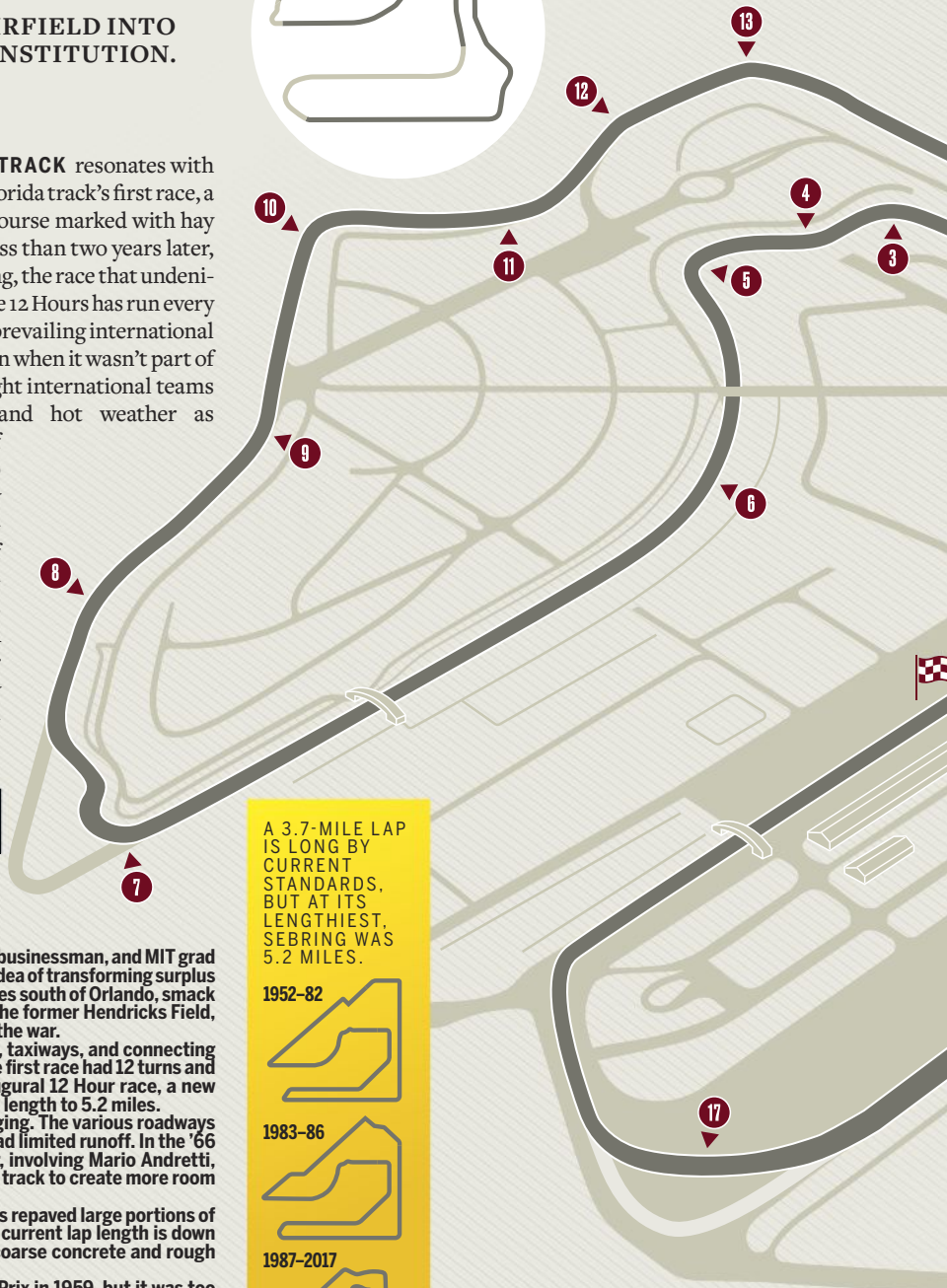
In 1983, 1987, 1991, and 1999, Sebring's owners repaved large portions of the track and revised the layout. As a result, the current lap length is down to 3.7 miles, but about 0.9 mile of the original coarse concrete and rough transitions still remain.

Sebring hosted the first United States Grand Prix in 1959, but it was too remote to garner much attention, attendance, or revenue. However, the track has been on the international sports-car calendar for most of its existence.

ONE LUMP OR 200?
Sebring is notoriously bumpy. Some of the concrete stretches—shown here in light gray—are still the original WWII-era runways.



1



A 3.7-MILE LAP IS LONG BY CURRENT STANDARDS, BUT AT ITS LONGEST, SEBRING WAS 5.2 MILES.

1952-82



1983-86



1987-2017



HOW TO DRIVE SEBRING:

Turns 1 and 2

Turn 1 is very wide, and cars can enter three abreast. But the line is critical, as the proper exit is only one car wide. Enter from the right side of the track, start braking at the bridge, and turn in at the end of the wall separating the pits from the track. Apex all the way to the left, with your left tires inside the painted stripe next to the wall. Use all of the road at the exit, keeping the accelerator flat through the gentle kink that is Turn 2.

Turns 3-5

Enter from track right, brake heavily a little past the access road on your right, turn in near the end of the right-side curbing, and apex at the end of the left-side curbing. Under full throttle, point toward the Turn 4 curbing, which comes up immediately, and apex halfway through the right curbing. Brush the brakes slightly as you enter Turn 5—the long left-hander named the Carousel—taking a late apex and exiting all the way on the right at full power. A fast exit is important as the track is flat-out for the next 3050 feet.

Turns 6-9

Turn 6 is a mild right-hander that's taken at full throttle. You want to make sure you end up on the left side of the track entering the very slow Turn 7, called Hairpin. This gets tricky because you are pointed dead west and, at dusk, staring straight into that famous Florida setting sun. Brake heavily, minding the big pavement undulation early in the braking zone, and turn in about two-thirds of the way along the left curbing. Apex on the inside curbing a bit past the middle. A strong exit is important here as well, because Turns 8 (the Fangio Chicane) and 9 are also flat-out.

Turns 10-12

As you approach Turn 10, you'll need to brake heavily and turn in near the beginning of the curbing on the left and apex near the last third of the curbing on the right. You can hold full power from this exit through the gentle Turns 11 and 12.

Turn 13

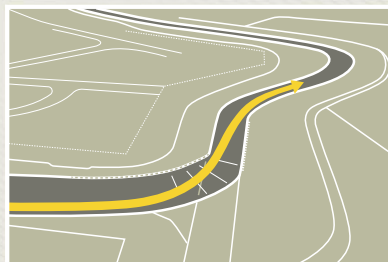
The right-angle Tower Turn requires strong braking as you approach from the left side of the track. Turn in so your path takes you over the "T" formed by an intersection of three different pavement sections. Apex in the middle of the right-side curbing and power out as hard as you can, as you are heading toward another long and fast section.

Turns 14-16

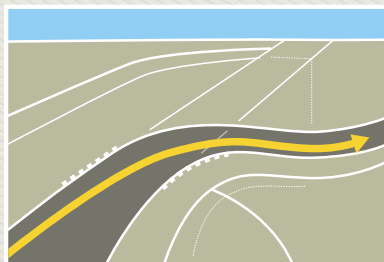
Exit 13, stay hard on the gas, shifting up as you accelerate through Bishop Bend, the flat-out Turn 14. After exiting on the right side of the track, work your way back to the left side as you approach Gendebien Bend, Turn 15, which requires some braking. Be careful not to upset the car here. Stay on the left side of the track, and when the curbing ends, start braking gently for Turn 16, the Le Mans Curve. It's a fairly wide 90-degree turn. Take a conventional line, trying to get on the throttle even before the apex as the turn leads onto the 3082-foot Ulmann Straight.

Turn 17

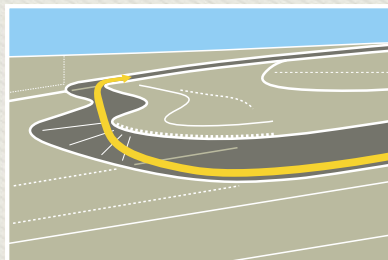
Turn 17 leads onto the start/finish straight and is a very wide, decreasing-radius, 180-degree corner. It uses the original concrete pavement and is partly lined with concrete walls. As you brake, downshift and turn in near the second set of cones into the first part of the corner. You must stay a bit wide of the inside wall in the beginning to carve a smooth arc that brings you closer to the wall toward the exit. The single apex is on the inner edge of the track just past the end of the inner wall. By the time you get there, you want to be back on the power and drifting toward the outside wall on the left. The straight is plenty long enough for you to gently work your way over to the right side to properly position for Turn 1.



3-5



10



7



13



15-16

17

You probably never noticed, but a lot of the power-pitching Machia-vellis in the auto biz have not necessarily been persons you'd invite into your home. If you had wanted to discuss politics with, say, Enzo Ferrari, you'd best be carrying

pepper spray. Alejandro de Tomaso would steal your wife's underwear and maybe two ashtrays. Carroll Shelby was always about 19 inches from the flaming-hot door of a federal district court. Henry the Deuce once ate a bag of puppies. John DeLorean, studying 59 pounds of cocaine, famously uttered, "Good as gold!" And I'm not even going to say a word about former supercar builders Jerry Wiegert and Warren Mosler, because I'm afraid of them.

But I will say this: Those guys actually, you know, *built* stuff—crazy, eccentric, non-sensical mobile fascinations that often went straight to nowhere yet delighted nearly everyone, particularly me. Compare their no-fear accomplishments with the inane wallflower sanity of, oh, say, GM's Roger Smith, who couldn't even hold his own against Michael Moore.

Which brings us, indirectly, to our latest automotive bad boy, Lapo Edvard Elkann. He is the grandson of Gianni Agnelli and the brother of John Elkann, the chairman of Fiat Chrysler. Our man Lapo was once a

personal assistant to Henry Kissinger; he was Fiat's director of marketing for the launches of the Punto and the 500; and he created Garage Italia Customs, a salon in Milan that can digitally camouflage your Ferrari (adding a few peace symbols along the way) and upholster its cockpit in velvet with a carbon-fiber instrument panel wrapped in marble, plus a handbrake that imitates a samurai's sword handle. Japanese denim is also available. Lapo refers to the company as an "atelier," which means it's a store you and I can't afford.

Needless to say, 39-year-old Laps—that's his nickname—was born with a silver spoon in his mouth, which he immediately had gold-plated and diamond-encrusted, then filled with cocaine (hello, Mr. DeLorean!) and later heroin. That last adventure in chemicals landed Laps in *Vanity Fair*, where I learned this: "[Elkann] had been found naked and unconscious in the apartment of . . . a 53-year-old transsexual prostitute."

But wait. In his personal race for more than 15 days of fame, Laps wasn't finished. In fact, last November he lapped himself by getting arrested in Manhattan, along with Transgender Escort Number Two, for filing a false police report, a charge that's since been dropped. He claimed that he'd been imprisoned in a public-housing project. (If you're in a public-housing project, aren't

you by definition imprisoned?) Better still—and this part simply surpasses four aces—Laps is said to have contacted his family to explain that he'd be harmed if they didn't cough up a \$10,000 ransom, pronto. *Ten grand?* That's roughly the cost of any one of his 400 double-breasted rainbow-hued suits, among them a fire-engine-red number that he sets off with orange carbon-fiber Elton John specs, velvet slippers, and shirt cuffs embroidered with "LAPS." Sometimes he dresses according to any of the five languages he'll be speaking that day.

The cops described Lapo's complexion as "blotchy," and along the length of his left forearm they noted a tattoo that read "INDEPENDENT." It may interest you to know that, in a *Newsweek* story in 2011, Lapo said, "We need to hit reset." He was referring to Italian manufacturing, but it made me want to gently take the guy aside and whisper, "Maybe hit that reset button for yourself, my man."

You may recall that Sergio Marchionne, CEO of Fiat Chrysler, delayed the launch of Alfa's mid-size sedan, the Giulia. Marchionne told *Automotive News* that it was "technically immature." Which, at the time, made me think of the charming Dennis the Menace that is Lapo. Marchionne is soon retiring. I wonder if you-know-who drove him over the edge. I hope not, because my point here is: Every car manufacturer—including Fiat Chrysler—needs a daily injection of charismatic Technicolor that a black-sweatered Marchionne is now barely supplying. Plus, of course, I'm still hugely ticked that Marchionne pushed out Ferrari's Luca Cordero di Montezemolo, a man whose intense passion once led him to destroy his TV when Ferrari lost a Formula 1 race. *That's* the guy I want in my company. And Laps. And maybe two psychiatrists on retainer.

Perhaps you'll recall *The Big Lebowski's* Walter Sobchak suggesting: "Smokey, this is not 'Nam. This is bowling. *There are rules.*" And, true enough, *there are* rules. But I hope few of them are ever followed by my unpredictable manic man in Milan. 🇮🇹



LAPO IS DRESSED IN RED. BUT YOU CAN'T SEE THE FERRARI BECAUSE IT'S CAMOUFLAGED.

John Phillips

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At the Front is a Kentucky firm that sells precise reproductions of WWII uniforms and gear. Not that I'm in the market for an M1938 Tanker Helmet ("Same as those used by Angeline [*sic*] Jolie's soon to be ex..."), but I am a fan of the

company's snarky emails. The latest one stated that the reason German SS uniforms remain unavailable is "not so much about political correctness as it is the hoards [*sic*] of raving lunatics with stolen credit cards that they attract." It also said, in answer to what must be endless questions about why much of ATF's stock comes from overseas, that it is simply cheaper to import. The company's been in the business 25 years, and its customers seem to just shrug and keep buying. "Patriotism is indeed connected to the wallet," said the email.

A timely observation, perhaps, as a new president rides into office taking potshots at the auto industry for building cars in foreign lands. Well, a certain foreign land just to the south, because so far, the many Chargers, Challengers, and Impalas raining down from snow-white Canada have yet to draw much presidential Twitterage. Just as successive presidents of France have done to preserve a lavishly coddled native industry, Trump threatens crushing tariffs to keep jobs at home.

He's only the latest Oval Office occupant to smack around the auto industry in the hope of making America greater. Barack Obama wanted us to buy less fuel, so he capitalized on the industry's weak negotiating position after the bailouts and got it to agree to tougher CAFE standards. If Obama and Congress wanted the nation to use less

oil, they would have raised the fuel tax. But only Obama wanted it, so NHTSA—under the helm of an Obama appointee—raised CAFE standards instead, forcing automakers to build leaner vehicles but not forcing buyers to want them.

If Trump hopes to bring back jobs, he needs to make this an attractive place to make stuff, not wall us off with torn-up trade agreements that will make everything more expensive. Do we want a healthy, agile auto industry or do we want a national jobs program that happens to make cars? This is what they have in France and

especially in Russia, where the 45,000 workers at the Renault-Nissan-operated Avtovaz plant that makes Ladas in Togliatti produced about 270,000 vehicles in 2015. By comparison, Toyota, another target of Trump's tweets, made about 500,000 vehicles in 2015 in its Georgetown, Kentucky, complex employing only 8000 workers.

Here is what the auto industry is good at: making safe, reliable products at affordable prices. Here is what the auto industry sucks at: forcing social change desired by government. I'm not talking about better safety or lower emissions, I'm talking about changing American society by strong-arming the car industry. It is simply a bad tool to do the job, like pushing on string.

In January, what political spin surgeons call "the optics" were rather fabulous for

Trump when Ford pulled out of a \$1.6 billion plant rising in the Mexican state of San Luis Potosí that was to assemble the Focus. Despite widespread insider belief that Ford simply terminated an ill-conceived capacity expansion, here was another company successfully arm-twisted to save jobs, no matter the rich irony that Ford's announced alternative investment in green vehicles comes just as a new administration comes in hostile to environmental regs.

The reasons Ford and others build vehicles in Mexico go way beyond simple labor costs. Mexico has better trade agreements with many overseas markets, so a car made in Mexico costs less to export than one built in the U.S. That's especially important when it comes to the kind of low-margin small cars that automakers like to build in Mexico. Also, as one Big Three exec confided to me at the Detroit auto show, staffing U.S. plants nowadays isn't easy. With baby boomers retiring at the rate of 10,000 per day, there's an increasing shortage of qualified replacements, now that public schools are abandoning their industrial-arts programs. We're past the age of grunts slinging on bumpers; in today's more automated plants, it's a technical job requiring teamwork, problem solving, and machinery skills, and it pays accordingly.

And, added the Detroit exec in a low confessional voice, finding Americans willing to work the unpopular late-night third shift, or even just to pass a drug test, is also proving difficult. Instead of fixating on Mexico, perhaps Trump should ponder Germany, also an expensive place but one where industry nonetheless thrives thanks to an obsession with exporting, an excellent trade-school system, and semi-nationalized healthcare, which lifts huge costs off the backs of manufacturers.

The hardest thing any Trump critic may ever have to do is admit that the Donald did something right. American jobs are a good thing; saving them should be the goal of any president. But exactly how much is American patriotism connected to the wallet? We're about to find out, and we may not like the answer. ■



Aaron Robinson



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I pulled up to the police roadblock prepared to do some fancy talking, but the car did the talking for me. Somewhere up the hill, on the grounds of a sprawling L.A. estate, Lamborghini was having a party. Parking was so limited that the

guests had to ride a shuttle bus from a remote lot. But when you roll up to a Lamborghini party in a 1988 Countach 5000 Quattrovalvole, the gatekeepers demand no supplication. At least, not from us. But I felt compelled to explain the second half of our convoy. “Could you let the guy on the Vespa follow us?” I asked. “This is his car.”

You’d think that if you owned a 5000, you wouldn’t miss an opportunity to show off, because “Countach” is Italian for “Feast your eyes on this, ladies.” Its rear wing was the cocaine buffet table during the shoot for David Lee Roth’s “Just a Gigolo” video. With the roofline at 42 inches, the Countach is about as tall as a five-year-old but demands more attention. It’s not just an ego car. It’s the definitive ego car.

And yet my friend David, the Lambo’s owner, had little interest in making a splashy entrance. “You drive,” he said. “I’ll follow on the Vespa and just throw it in the bushes when we get there.” Apparently David doesn’t harbor a craven need for



attention, but I certainly do, so by the time he was halfway through his sentence I was sitting in the Countach, shoes off, cranking the ’80s mix cassette that’s on permanent loop in the vintage Alpine. I didn’t remove my shoes out of politeness, by the way. I did it because the Countach’s three pedals

are evenly spaced one Higgs boson apart. Trying to downshift is like playing footsie with a manatee.

Since the shotgun seat was empty, David invited his friend Townsend Bell, an IndyCar driver. And so we set off, just a couple of equally talented drivers in a

red Countach followed by a guy on a Vespa.

The nice thing about driving a Countach at night is that the outward visibility doesn’t change much. Darkness or a B-pillar, what’s the difference? The tough thing about driving this particular Countach is that the clutch was on the way out. David figured it would get us to the party, but even a mildly feisty jab of the throttle would send the V-12 revving far out of proportion to the increase in road speed. Now I know what it would’ve been like if they had built the Countach with a CVT.

The cops bought my story about our scooter-riding friend, and we pulled up to the velvet rope looking like time travelers from the year 1980-awesome. Up at the house, a crowd of beautiful people surrounded a draped car that was somehow

parked on top of the pool, seeming to float above it in a bit of *trompe l’oeil* staging. Even with its shroud, you could tell this was a Huracán Spyder—the new rear-drive Huracán Spyder, as it turned out. Only Lamborghini could throw a party to celebrate the removal of a pair of half-shafts.

As I mingled with the cosmetically enhanced denizens of Pacific Palisades, I spied the distinctive profile of Mr. Justin Bieber. I figured Bieber was there because this was the sort of bottles-and-models scene that he’s into. But it turns out there may have been something of a corporate connection, because a week later Lamborghini sent out a press release announcing that he visited the factory in Sant’Agata. The publicity stunt was perplexing, because in the Venn diagram of people who can afford Lamborghinis and people who are into Justin Bieber, the overlap consists of Justin Bieber.

As it happens, I’d also recently stopped by Lambo headquarters (ships in the night, Biebs and I), where I’d talked to CEO Stefano Domenicali about his hopes and plans for the company. Near-term, the Urus is hugely important, and right now Lambo is expanding the factory to produce it. He’d like to do more racing, as you’d expect from a guy who ran Ferrari’s Formula 1 team for six years. And he doesn’t quite know how Lamborghini will define itself when supercars are all electric, but that day is far enough in the future that it probably won’t be his problem.

The question I didn’t ask, but wish I had, was whether Domenicali has any desire to escape the gravitational pull of the Countach, the car that set the template for every doorstep spaceship since. The answer, I suspect, would be, “Why would you want to?” That’s what I was thinking as we left the party, Bell behind the wheel and I on the passenger side with the door up, soaking in the attention. As we idled past the crowd, a guy with an Italian accent yelled, “Now that’s what a V-12 should sound like!” and Bell obligingly blipped the throttle. There was a pop star up by the pool, but the rock star was on its way back to the garage. ■



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Michelin Pilot Sport A/S 3 (34 or V-Speed Rated)	2	94%	7.2	8.7	8.7	9.0	9.2	8.9	6.3	5.1	5.0	8.4	8.0	7.3	1,563,677	
Kumho Ecsta FA31	3	93%	6.4	8.1	8.2	7.9	8.4	7.9	7.7	6.8	6.3	8.0	7.7	7.2	1,935,841	
Firestone Firehawk Wide Oval A/S 34 or V-Speed Rated	4	89%	5.8	7.5	7.5	7.1	7.6	7.1	7.9	7.9	7.6	6.9	6.2	7.4	464,435	
BFGoodrich g-Force Super Sport A/S 34 or V-Speed Rated	5	89%	6.5	7.7	7.9	8.4	8.7	8.3	6.4	5.4	5.5	7.4	6.9	7.1	1,858,548	
Yokohama ADVAN ZENOS (34 or V-Speed Rated)	6	87%	5.8	8.0	8.1	8.3	8.7	8.4	5.8	4.8	4.7	7.9	7.5	6.4	14,548,200	
Goodyear Eagle F1 A2	7	85%	5.4	8.0	7.8	7.9	8.4	7.9	6.4	4.8	4.1	7.6	7.4	6.6	320,915	
Hankook Ventus V2 concept2	8	81%	5.2	6.9	6.8	7.7	8.0	7.9	5.1	5.0	3.7	7.7	7.4	7.1	537,600	
Firestone Firehawk C2	9	78%	4.4	7.1	7.0	7.9	8.2	7.9	5.6	4.5	4.4	6.4	5.5	6.1	5,290,016	
Firestone F140	10	73%	3.5	6.8	6.9	7.4	7.8	7.6	5.8	4.4	3.3	5.8	5.0	5.4	515,605	
Dunlop SP Sport 7000 A/S	11	70%	3.0	5.9	6.1	7.1	7.6	7.0	5.2	4.3	3.9	5.8	5.2	5.0	5,066,595	
Yokohama ADVAN A85A	12	66%	1.1	6.8	6.7	7.7	8.0	7.7	4.0	2.8	1.8	6.3	3.7	4.5	454,792	
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3 TURIN/BOLOGNA
1 HONG KONG
1 SEOUL
4 TOKYO/HIROSHIMA
5 MUNICH/INGOLSTADT
2 WOLFSBURG
3 LONDON
1 GOTHENBURG

Arrivals. If you've ever been to an airport to pick up a loved one, you know the feeling—anticipation and excitement mixed with impatience. Waiting isn't easy, especially when the airport police start tapping on your window, parking costs \$20 an hour, and the split-flap display keeps flip-flip-flipping over the same information. Land already. At the end of it, though, there's the satisfaction of going home with the one you love. In the next few years, you'll be able to go home with each of the 25 cars we've listed here. And because the embrace you give an arriving spouse is a lot different than the one you might give to Uncle Seth, we've listed these cars by how much you'll want to hug them. Maybe Seth should just take a Lyft.



GATE	POINT OF ORIGIN										ARRIVING
25	T	O	Y	O	T	A	C	-	H	R	2017
24	B	M	W	X	2						2018
23	B	U	I	C	K	R	E	G	A	L	2017

Toyota C-HR

What it is: A Nissan Juke competitor. We know it's hard to believe, but apparently there's a burgeoning market out there for them.

Why it matters: It's a new high-water mark in rear-door-handle silliness. And it's proof that the Old World is just as impractical as America. After years of Europeans criticizing our love of crossovers, we've arrived at the point where these vehicles are developed with Continentals (and Middle Kingdoms) in mind, with the U.S. as an afterthought, which is the case here. Plus, why should Toyota be comfortable with just 10.2 million global sales, when it can make that 10.3 or even 10.4?

Platform: Along with the 2017 Prius and the just-announced 2018 Camry, the C-HR introduces the Toyota New Global Architecture (TNGA) that will eventually underpin half the

vehicles Toyota sells each year. The C-HR is a significant 8.8 inches longer than the Juke, with an additional 4.3 inches of wheelbase promising a more useful rear seat and more cargo room.

Powertrain: A 144-hp 2.0-liter four-cylinder delivers torque to a CVT driving the front wheels and only the front wheels.

Competition: Chevrolet Trax, Fiat 500X, Honda HR-V, Jeep Renegade, Kia Soul, your soul, Mazda CX-3, Nissan Juke, and that Buick that looks like a potato.

What might go wrong: The U.S. or maybe Uber could adopt a requirement that all door handles be mounted along a vehicle's beltline, which would totally screw up the delicate balance in the C-HR's styling.

Estimated arrival and price: Sales should begin any day now, with prices starting near \$20,000.

**BMW X2**

What it is: A rebodied derivative of the BMW X1, slightly less practical and more sporty-looking. Sort of what the X4 is to the X3, the X6 is to the X5, and blonde Rihanna is to natural Rihanna. It'll have a low-slung shooting-brake roofline, a windswept shape, and, down the road, there might even be a convertible version.

Why it matters: Unlike the X4 and X6, which share much of their front-end design with their more rectilinear cousins, the X2 will have distinct styling from front to back. The X2 is also important in that it will usher in a new styling language for the BMW brand, one that includes a fresh interpretation of the kidney grille. The X2 will find itself competing in a rapidly growing segment. It'll likely sell well in China.

Platform: The X2 is built atop BMW's UKL platform that is shared with the X1, the European-market 2-series Active Tourer and Gran Tourer, and the entire Mini lineup. It's a transverse-engine architecture with all-wheel-drive capability, and we believe every X2 will have all-wheel drive.

Powertrain: Look for BMW's ubiquitous turbo 2.0-liter four with more than 200 horsepower. Europe will get diesels as well; we won't.

Competition: Audi Q3, Infiniti QX30, Land Rover Range Rover Evoque, Mercedes-Benz GLA.

What might go wrong: This being a close relative to the comparison-test-winning X1, we don't foresee there being much risk here.

Estimated arrival and price: The X2 will come in early 2018, priced roughly \$2000 above an xDrive-equipped X1, which means a starting price of about \$38,000.



Buick Regal

What it is: As before, Buick's new mid-size Regal will be little more than a European-market Opel Insignia wearing the Buick insignia, er, Tri-Shield. With Cadillac's rear-drive ATS busy chasing the BMW 3-series, the front- or all-wheel-drive Regal has always seemed more like a low-budget Audi A4. The new Insignia/Regal looks to move further upscale to pull even closer to the A4.

Why it matters: The rumored arrival of a Regal wagon on our shores would have been enough to get our attention, but the new Insignia's sharp, athletic styling has us genuinely excited about a production Buick (we can't remember the last time we said such a thing).

Platform: The same E2XX platform underneath the latest Chevrolet Malibu.

Powertrain: To keep the base price below \$30,000, the Regal may come standard with the Malibu's 163-hp, turbocharged 1.5-liter inline-four, paired with an automatic transmission to drive the front wheels. Much more enticing is the idea of a 2.0-liter turbo four producing between 260 and 300 horsepower mated, as it is in the Insignia, to an all-wheel-drive system incorporating the same GKN-supplied torque-vectoring rear differential used in the Ford Focus RS. Given that Buick killed off the manual-transmission version of the previous Regal GS for 2015, we're sad to say that a stick-shift option is unlikely.

Competition: Acura TLX, Audi A4, Ford Fusion Sport, Lincoln MKZ, Volkswagen Arteon, Volvo S60.

What might go wrong: Although a hotbed-up Opel Insignia OPC is a sure bet for Europe, there's no guarantee that all of that model's performance tweaks will make their way into a new Regal GS. Additionally, rumors concerning the wagon version suggest that it may be offered in the U.S. exclusively as a raised Subaru Outback-like variant with all-wheel drive and extra body cladding.

Estimated arrival and price: Late this year, in the same price bracket as the current Regal, which ranges between just under \$30,000 up to a bit over \$40,000.

GATE

POINT OF ORIGIN

ARRIVING

22

SUBARU

2017

ASCENT

**Subaru Ascent**

In terms of sales momentum, Subaru continues to ascend, a huge cartoon snowball somehow barreling uphill, picking up skiers, snowmobiles, and the odd yeti. It started with a U.S. sales record in 2009, when 216,652 Americans bought Subarus. Seven consecutive record years later, the brand came close to tripling that total, with 615,132 sales in 2016. Its industry-leading customer-retention rate means that more people come back to buy another Subaru than do the buyers of any other brand in the U.S. But there's a limit to this momentum; Subaru customers regularly outgrow the brand's lineup as they look for larger vehicles. In its portfolio of family-friendly hatchbacks and wagons, it has nothing that seats more than five.

The Ascent will change that. Subaru learned a hard lesson with its last attempt at a seven-seater, the B9 Tribeca (later called simply the Tribeca) that it introduced in 2005 and gave up on about a decade later. Aside from its odd looks, the biggest problem with the Tribeca was that it wasn't big enough. There are smaller three-row SUVs out there still, but not in the indispensable this-or-a-minivan class. That won't be a problem this time around. The Viziv-7 concept that first previewed the Ascent was longer than a Chevrolet Traverse and as wide as a Ford F-150. We're guessing the production Ascent might shrink a little bit, but either way, it's clear that Subaru intends to get the interior space right this time.

Surprisingly, the seven-passenger Ascent will share its platform with the Impreza. Subaru's Global Platform, introduced under the new 2017 Impreza, is designed to accommodate vehicles of all sizes.

Also as in the Impreza, the Ascent will pack a flat-four. Subaru still has a flat-six in its portfolio, but given that engine's 15 percent take rate in the Outback and Legacy and the fact that Subaru's turbo 2.0-liter boxer produces nearly equivalent power plus more torque at lower rpm, watch for the carmaker to commit fully to a four-cylinder future. We've spotted prototypes conveying with a Mazda CX-9 and Ford Explorer, the only Ascent competitors to offer turbo fours. And since it's a Subaru, expect it to back that four with a CVT routing power to all four wheels. A hybrid model seems inevitable in a few years' time.

The Ascent arrives in Subaru showrooms by midyear as a 2018 model. Figure on a base price of about \$35,000 and wait for Subaru's snowball to continue its improbable roll uphill. —Jared Gall

U

**UPDATE:
2019 BMW M5**

To the M5's already daunting array of driver-selectable settings, the new F90-series will add at least one more: rear-wheel-drive mode. Yes, the über 5er will be the first M5 to use all-wheel drive—the better to wrangle the 600-plus-hp stamped out of its twin-turbo V-8. Cars should arrive in the U.S. in early 2018.



GATE

POINT OF ORIGIN

ARRIVING

21

VOLKSWAGEN

2017

ATLAS

Volkswagen Atlas

What it is: VW's new three-row crossover, challenged with lifting the smoggy skies that have been shrouding the brand since the diesel cheat broke. This Honda Pilot-sized SUV packages seating for six or seven along with ample cargo space. For the time being, the pricier, two-row Touareg will continue to sell alongside the Atlas.

Why it matters: Built in Chattanooga, Tennessee, the Atlas is VW's first U.S.-made SUV, and, with three-row-SUV sales growing fast, VW desperately needs a player if it wants to make a comeback.

Platform: VW's versatile MQB components set (Golf, Audi A3, etc.) is stretched to its max for the Atlas.

Powertrain: The standard engine will be a turbocharged and intercooled 2.0-liter four-cylinder with 238 horsepower driving the front wheels through an eight-speed automatic. A 3.6-liter V-6 delivering 280 horsepower will be optional and mated to the same transmission, with a choice of front- or all-wheel drive.

Competition: Chevrolet Traverse, Dodge Durango, Ford Explorer, GMC Acadia, Honda Pilot, Hyundai Santa Fe, Kia Sorento, Mazda CX-9, Mitsubishi Outlander, Nissan Pathfinder, Toyota Highlander.

What might go wrong: Having driven lightly disguised prototypes, we're convinced the Atlas will carve out a place in its crowded segment.

Estimated arrival and price: Due this spring, VW's big boy is expected to start around \$30,000 and top \$50,000 when loaded.



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**FACT:
BABY GRAND**

The Atlas's second-row seats can hold child-safety seats and still slide and fold forward to provide access to the third row.

Mazda CX-5 Skyactiv-D 2.2

What it is: A compression-ignition middle finger to the masses of virtually identical life-ends-with-children mobiles. Should also come with the bonus of meaningful steering feel and impressive road manners.

Why it matters: If the CX-5 diesel works as it should, it could offer segment-leading fuel economy and performance. According to a Mazda representative, the company's most recent attempt at bringing a diesel stateside in the Mazda 6 ended with a tough decision. "It could be made to drive the way we wanted or it could meet U.S. emissions, but not both," he said. "We wouldn't accept that." Mazda says it has solved that problem here. And so, with VW out of the TDI game, if you're looking for a fun-to-drive diesel, it'll likely be this one.

Platform: Mazda mildly altered the CX-5's platform for the 2017 model year, providing a marginally lower center of gravity. An additional 0.4 inch of track width increases stability.

Powertrain: A urea-injected version of Mazda's European-market sequentially turbocharged 2.2-liter diesel four-cylinder mates exclusively to the company's existing six-speed automatic transmission. Revisions to the engine's injector design and injection strategy will help the



GATE	POINT OF ORIGIN				ARRIVING
20	MAZDA	CX-5			2017
	DIESEL				
19	INFINITI				2017
	QX50				



2.2 exceed the 173 horsepower it makes in the rest of the world. Drivability and NVH also will be improved over that engine, which chugs out 310 pound-feet of torque.

Competition: With VW's presumably permanent diesel stop sale, Mazda could win buyers who can't resist a modern oil burner. Kia's Niro hybrid [see page 086] will offer similar or greater efficiency at the cost of slightly reduced cargo space and far less driver involvement. The rest of the crossover sea roils with choices lacking this CX-5's efficiency, driving character, or both.

What might go wrong: Though it's unlikely Mazda will screw up its second run at a U.S. diesel, the EPA's scrutiny of these powerplants has only increased since Dieselpgate. Delays are possible.

Estimated arrival and price: Mazda says to expect the diesel-powered CX-5 no sooner than fall. No definitive word on pricing yet, but if the diesel engine is available in lower trim levels, a sub-\$30,000 version is possible.

Infiniti QX50

What it is: Infiniti's replacement for the aged QX50, the crossover formerly known as EX35.

Why it matters: This is the first production vehicle whose engine will actively vary its compression ratio. With a turbocharger and a variable-valve-timing system that is capable of running the Miller cycle, Infiniti says this 268-hp four-cylinder is 27 percent more efficient than a six with equivalent power.

Platform: Infiniti will trade the long-serving rear- and all-wheel-drive FM platform that underpins the current QX50 for a new transverse-engine architecture spawned from a cooperative agreement with Mercedes-Benz. This new

platform has Mercedes roots but is different and larger than the Benz GLA/Infiniti QX30 platform. As of now, it's not known which Benz will share this platform. The QX50 will be built at Nissan's Aguascalientes, Mexico, assembly plant.

Powertrain: The new engine, dubbed VC-T for "variable compression turbocharged," varies its compression ratio from 8.0:1 to 14.0:1 with a system of links, an eccentric shaft, and an actuator in the inline-four's crankcase. Within the span of 1.5 seconds, this engine can change its piston stroke from efficient, low-boost, high-compression operation to high boost and low compression for maximum

power. The only transmission offered is a CVT, and all-wheel drive is optional.

Competition: Audi Q5, BMW X3, Cadillac XT5, Jaguar F-Pace, Lexus RX, Porsche Macan.

What might go wrong: The VC-T engine fits three times the typical number of bearings between its connecting rods and crankshaft, and new technologies often have teething issues, so reliability will be paramount to VC-T's success. But Infiniti is so confident in this engine tech that it plans to install it eventually in just about every 2.0-liter four-cylinder application it has.

Estimated arrival and price: This fall as a 2018 model, with a starting price of about \$37,000.

GATE

POINT OF ORIGIN

ARRIVING

18	VOLKSWAGEN	2017
	ARTEON	
17	VOLVO 40-	2017
	SERIES	

Volkswagen Arteon

What it is: A stylish four-door-hatchback replacement for the aged Volkswagen CC. If its name is a portmanteau, we take it to mean art for the ages.

Why it matters: The Arteon is to the car side of VW's showrooms what Atlas is to the truck side: a new flagship responsible for accelerating the brand's return to relevance.

Platform: VW's ubiquitous MQB transverse-powertrain components, set up for sedan use.

Powertrain: A turbocharged and intercooled 2.0-liter inline-four packing 270 horsepower and 280 pound-feet of torque (substantial increases over the outgoing CC's turbocharged 2.0-liter) with an Aisin eight-speed automatic transaxle sending output to the front wheels. VW's 4MOTION all-wheel drive will likely be optional.

Competition: Acura TLX, Audi A4, BMW 320i, Buick Regal, Cadillac ATS, Infiniti Q50, Lincoln MKZ, Volvo S60.

What might go wrong: Given the importance of this model to VW's global fortunes and how well it performed in prototype test drives, we see minimal chance of derailment.

Estimated arrival and price:

Following its official debut at this year's Geneva motor show in March, the Arteon will arrive in the U.S. this summer with an estimated \$37,000 base price.



H

HISTORY: ARCHITECTURAL DIGEST

The upcoming S40 will be the first iteration built on a Volvo platform. The first gen rode on a Mitsubishi platform, and the second gen was based on a Ford Focus. Developed in Sweden, Volvo's new compact architecture will underpin the entire 40-series lineup.

Volvo XC40, Volvo S40, Volvo V40

What it is: Scandinavian design for the masses in crossover, sedan, and eventually wagon shapes, no assembly required.

Why it matters: Volvo hasn't sold the compact 40-series in the U.S. in six years, but the premium-compact SUV and sedan classes have been booming ever since.

Platform: Volvo's new Compact Modular Architecture (CMA) accommodates front- or all-wheel drive and adjusts in every dimension save for the distance between the front axle and the firewall.

Powertrain: Turbocharged three- and four-cylinder engines will pair with a six-speed automatic transmission, although the three may only make it to U.S. showrooms in the planned plug-in-hybrid models. That powertrain will combine the boosted three-cylinder, a seven-speed dual-clutch automatic, an electric motor/generator, and a 9.7-kWh battery for approximately 250 horsepower. A



battery-electric model in an unspecified body style should deliver more than 200 miles of range.

Competition: For the XC40: Audi Q3, Infiniti QX30, Lexus NX, Lincoln MKC, Mercedes-Benz GLA-class. For the S40: Acura ILX, Audi A3, Lexus CT200h, Mercedes-Benz CLA-class. For the V40: Volkswagen Golf SportWagen.

What might go wrong: Lynk & Co, a Chinese automaker owned by the same holding company as Volvo, plans to develop cars on the XC40's platform. That demands a delicate balance between controlling costs for the mainstream brand and optimizing the structure for the luxury marque. Volvo has its work cut out for it if its CMA is going to match Volkswagen's MQB—not just in versatility but in perceived quality as well. All MQB vehicles drive like premium hardware, even the most pedestrian ones.

Estimated arrival and price: Expect the XC40 to launch at the end of the year with a starting price under \$35,000. The S40 sedan will follow about a year later at a slight discount, with the V40 wagon arriving in 2019.

GATE			POINT OF ORIGIN					ARRIVING				
1	6		R	A	M			2	0	1	7	
			R	E	B	E	L					

Ram Rebel

What it is: Ram's answer to the Ford F-150 Raptor.

Why it matters: With the full Ram engineering overhaul postponed, FCA is eager to use what it has on the shelf to eat into Raptor sales. Ram can't let Ford suck up every spendthrift interested in owning an airborne pickup.

Platform: Begins as the body and frame of the Ram 1500 but with appropriate durability upgrades required for flight.

Powertrain: FCA's illustrious supercharged and intercooled 6.2-liter Hemi V-8, currently operating under the Hellcat

alias, thunders underhood here, too. Backed up by an eight-speed automatic and all-wheel drive, this engine was armed with 575 horsepower in the Rebel TRX concept presented at last year's Texas State Fair, but we're hoping for more power when it reaches production.

Competition: Ford F-150 Raptor or a thoroughbred yearling with Kentucky Derby aspirations.

What might go wrong: If premium gas tops \$4 per gallon, FCA could geld it.

Estimated arrival and price: Look for it at the end of the year with an opening price of \$55,000.



GATE

POINT OF ORIGIN

ARRIVING

15	A	S	T	O	N	M	A	R	T	I	N	2	0	2	0
	D	B	X												

Aston Martin DBX

What it is: The newest sign that the end is nigh? Also, "nigh"? In what other context would one use that word? What were we saying? Oh, right, DBX. Well, it's part of Aston Martin's plan for long-term survival. And we all know what that means these days: a crossover/SUV-type thingamabob. We saw it first in concept form at the 2015 Geneva motor show.

Why it matters: It matters because the DBX is part of a plan to expand the tiny company's product portfolio beyond just shapely, ground-hugging coupes, of which Aston sells only about 4000 per year globally.

Platform: Initially, Aston considered using a Mercedes-Benz platform, owing to a tie-up between the companies. Instead, Aston will use a reworked version of its new component set, which first appeared under the new DB11 coupe. Expect it to be largely constructed of aluminum. Aston isn't crazy enough to produce a new version of the AMC Spirit, so the company has acknowledged that the production DBX will have four doors instead of the concept's two. And the roofline will be decidedly less coupelike so that human beings will fit in back.

Powertrain: There will be a full-electric version of the DBX eventually, but it won't arrive for at least a couple of years after the start of production. At launch, a Mercedes V-8 will power the DBX.

Competition: Bentley Bentayga, Lamborghini Urus, Tesla Model X.

What might go wrong: Aston pitched a rebodied Benz SUV concept called the Lagonda at the 2009 Geneva show. That bloated, frowning abomination was promptly euthanized. There is no guarantee that the production DBX won't end up getting hit by the same ugly stick that deformed the Bentayga.

Estimated arrival and price:

Aston has already begun work on a production facility in Wales to build the DBX. If all goes according to plan, the DBX should hit the tonier parts of town in early 2020. Price? More than the Model X and nearly as much as the Bentayga. Figure around \$225,000.

**Jaguar I-Pace**

It's been less than 10 years since Jaguar stopped building the self-consciously retro-styled S-type sedan. You remember, the car with a grille exactly the shape of a wall-mounted urinal? But have a look at the I-Pace, which the company will begin selling in a little more than a year's time, and you'd be forgiven for thinking it's been 50 years since the S-type. Or rather, you'd be forgiven for thinking that the two couldn't possibly have come from the same carmaker.

Mind you, there's nothing too radical about Jaguar producing a crossover. The

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**UPDATE:
2020 BMW Z5/
2021 TOYOTA
SUPRA**

BMW's Z5 coupe and convertible will use the brand's ubiquitous turbocharged inline-fours and -sixes plus a range-topping, performance-oriented hybrid. The current plan for Toyota's Supra coupe calls for a four-cylinder and a twin-turbo V-6 with more than 400 horsepower, but Toyota doesn't have a manual gearbox to cope with the V-6's torque, and it doesn't intend to build one. We have heard rumblings that Toyota is getting cold feet at the thought of selling a roughly \$40,000 sports car in a world gone crossover mad. While it's too late to back out of the sports-car tie-up, Toyota could reel in its spending by reverting to the original plan of using BMW power. All will be answered when the Supra and Z5 make their debuts in 2019.



company already sells one of those, the attractive F-Pace. And under the guidance of chief designer Ian Callum, the company has long since thrown off the shackles of retro styling. What's radical about the I-Pace is that it's a pure-electric vehicle based on a new platform. Furthermore, it's one of the first electrics to take full advantage of an electric car's packaging to rethink vehicle proportions. For example, the Tesla Model S and Model X are all electric, but their hoods are conventionally long—as if they had to accommodate an internal-combustion engine.

Not so on the I-Pace. The hood of this quasi-SUV is short and sloped, and the base of its aggressively raked windshield meets the body over the front wheels. This from the company that once produced the E-type, which was essentially all hood. The short nose and the clipped rear overhang mean that even though the I-Pace is about two inches shorter overall than an F-Pace, it rides on a wheelbase 4.6 inches longer. The I-Pace concept's roof is almost four inches closer to the ground than the F-Pace's, too.

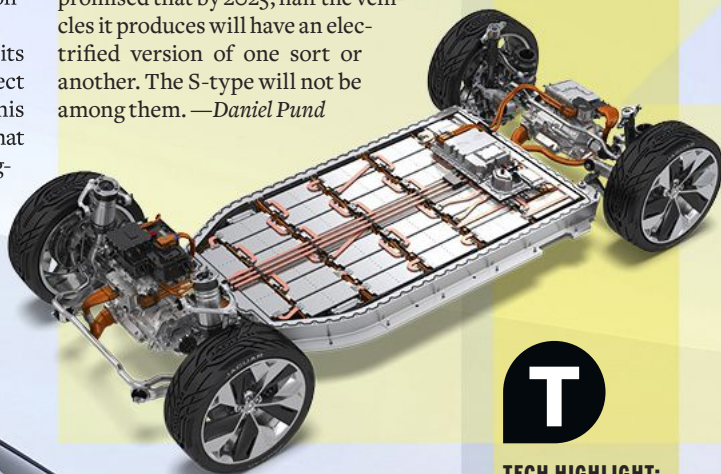
The vehicle pictured here is the I-Pace concept that Jaguar unveiled at last year's Los Angeles auto show. And like other recent Jaguar concepts, the production I-Pace will look almost identical to the concept—simply replace the 23-inch wheels with more conventionally sized units and drop the glowing blue lighting.

Like its competitor from Tesla, the I-Pace concept carries its 90-kWh battery pack in the floor. There's every reason to expect that the production version will have the same capacity. This liquid-cooled energy store, mounted in an aluminum housing that forms part of the vehicle's structure, delivers power to two Jag-designed electric motors, one for each axle. In the concept, those motors each produce 200 horsepower and 258 pound-feet of torque. The company reckons that that'll be enough power to

get the aluminum-intensive I-Pace to 60 mph in about four seconds. Jaguar estimates that the I-Pace should be able to travel more than 220 miles on a charge.

Expect sales of the five-seater to commence in the middle of 2018, with a target starting price under \$100,000. The I-Pace will be built by Magna Steyr in Austria. Further down the road, we expect Jaguar will use this platform, with its unequal-length-control-arm front and multilink rear suspensions, for a sedan. After all, the company has promised that by 2025, half the vehicles it produces will have an electrified version of one sort or another. The S-type will not be among them. —Daniel Pund

GATE		POINT OF ORIGIN						ARRIVING			
1	4	J	A	G	U	A	R	2	0	1	8
		I	-	P	A	C	E				


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TECH HIGHLIGHT: DC EXPRESS

The I-Pace's battery uses lithium-ion cells with nickel-manganese-cobalt chemistry. Jaguar claims that this combo has good potential for future increases in energy density. When completely discharged, the I-Pace's 90-kWh battery pack will take two hours to recharge on a DC fast charger; an 80 percent charge can be done in 90 minutes.

GATE

POINT OF ORIGIN

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13 KIA STINGER 2017

Kia Stinger

Kia gave us plenty of warning that it would eventually build a car like this. Back in 2011, Kia's Frankfurt show stand featured a rear-drive GT concept, and then, three years ago, Kia unveiled the rear-drive Stinger GT4 two-door concept in Detroit. While we knew that a Genesis-based Kia would eventually emerge, we didn't know that the hamster brand's reach into the premium segment would be a four-door hatchback and that it'd actually name it the Stinger.



We know that all kinds of silly names come up in the product-planning meetings at car companies, but rarely does one actually become a chrome trunk badge. Alas, we tease, but Kia gets some credit for being ballsy, if also slightly confusing. Hyundai has taken the risky but necessary gamble of spinning off Genesis as a separate luxury brand with a buying experience that is distinct from that for Accent intenders. Its most glaring need, apart from a line of cross-overs, is a smaller rear-drive BMW 3-series fighter. So it's surprising that, despite several Kia concept cars that warned us of its arrival, the very product that Genesis craves will appear first as a sort of Asian mini Porsche Panamera built on a Genesis platform and wearing a Kia badge. We live in strange times indeed.

The unusual but appealing design originated in Kia's European studio and furthers the reputation of Hyundai-Kia chief design officer Peter Schreyer [see WIDD, page 092] for delivering visual feasts. Say what you will about Kia, but it is not afraid to mix genres or take chances. The Stinger rides on a shortened version of the Genesis longitudinal-engine, rear-drive component set. It comes with a generous helping of high-strength steel to hold down the mass. The front suspension uses struts while a multilink arrange-

ment carries the rear. At 114.4 inches, the Stinger's wheelbase is about four inches shorter than the Genesis G80's, but the whole car is a bit larger than its intended targets—Audi A4, BMW 3-series, Infiniti Q50, and Lexus IS—and a low roof gives it a rather aggressive stance. Eventually, the Stinger will be joined by a Genesis doppelgänger with more-formal sheetmetal.

A turbo 2.0-liter four, familiar from Hyundai-Kia front-wheel-drive models, is rotated 90 degrees and delivers 255 horsepower and 260 pound-feet while the step up is a 365-hp 3.3-liter V-6 with twin compressors, the base engine in the big Genesis G90 banker's barge. The eight-speed automatic from Kia's last anomalous luxury reach, the forgettable K900 (see, you forgot about it), transmits the torque to either the rear axle or both axles.

The only hitch may be that American buyers have proven fearful of things they don't understand, such as a luxury hatchback sedan sold in the dealerships of a brand that normally trades in more modest fare. No doubt this is why Kia chose Stinger for the name instead of K901 or something equally forgettable.

The stinging begins this summer with prices expected to fall in the bustling \$35,000-to-\$45,000 range. —Aaron Robinson



GATE		POINT OF ORIGIN										ARRIVING				
1	2	A	L	F	A	R	O	M	E	O			2	0	1	7
		S	T	E	L	V	I	O								



Alfa Romeo Stelvio

What it is: The latest in a string of Italian blasphemies that should make the Pope blush and will undoubtedly be the best-selling Alfa Romeo in the U.S.

Why it matters: If you work in an Alfa dealership, you've had ample time lately to perfect some sick drum licks with pencils and your desk. The Stelvio and its Giulia sedan sibling might actually coax a few customers through your doors, simultaneously saving your job and the brand.

Platform: The same architecture on which Alfa drops the Giulia, including aluminum for the doors, fenders, subframes, and assorted suspension bits. This bodes well for the Stelvio, as the Giulia is rather spectacular and just dispatched a BMW M3, a Cadillac ATS-V, and a Mercedes-AMG

C63 S to win a comparison test last month ["Sports-Sedan Tragicomedy," March 2017].

Powertrain: Again, the same as the aforementioned spectacular Giulia: a turbocharged 2.0-liter inline-four, which embarrasses many sixes with its 280 horsepower and 306 pound-feet, or a twin-turbocharged 2.9-liter V-6. Fairly described as 75 percent of a Ferrari V-8 for about 25 percent of the price, the 90-degree sextuple pounds out 505 horsepower and 443 pound-feet. In a crossover. If it can meet its claimed 3.9-second zero-to-60-mph time—we expect it'll actually beat it—it will be the cheapest sub-four-second SUV by some \$30K. Which is a sentence we never expected to write. All Stelvios will come standard with all-wheel drive.

Competition: The Stelvio enters a pretty busy—and, we begrudgingly admit, exciting—class that includes the Audi Q5, BMW X4, Jaguar F-Pace, Mercedes-Benz GLC, and Porsche Macan.

What might go wrong: Crossover buyers could decide that an Italian offering 505 horsepower is just too sexy and retreat to the familiar safety of the Honda CR-V. Or, for the money, three CR-Vs. So really, not much.

Estimated arrival and price: Watch for it to interrupt desk-drumming sessions this summer. Which means this fall, using Alfa time. Maybe the following spring. Summer 2018? Do we hear 2019? Prices for the turbo-charged four-cylinder Stelvios will start at around \$40,000 but climb beyond \$80,000 for a loaded twin-turbo Quadrifoglio model.

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**UPDATE:
JEEP GRAND
CHEROKEE SRT
TRACKHAWK**

Jeep quite obviously didn't get the Grand Cherokee Trackhawk ready in time for the 2017 model year, as we predicted back in 2015. However, the 'Hawk will make its debut at this year's New York auto show. Although a second generation of the Hellcat engine could approach 800 horses, we expect the current supercharged 707-hp V-8 to power the all-wheel-drive SRT Trackhawk.

GATE

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ARRIVING

11

JEEP

2021

WAGONEER

/ GRAND

WAGONEER

Jeep Wagoneer and Grand Wagoneer

How is it that, in a market gone gaga for three-row SUVs, there's not a single Jeep with a way-back seat? Armchair product planners might think this an oversight, while FCA shareholders no doubt consider it tantamount to corporate malfeasance. The good news is that not one but two are coming, resurrecting the storied Wagoneer nameplate. The bad news is that you won't be able to tie a wreath to a new Wagoneer's grille anytime soon.

The last—make that only—three-row Jeep was the Commander, a Grand Cherokee platform-mate whose sales dwindled to almost nothing before Jeep discontinued it after the 2010 model year. With its smallish third row, a cheap interior, and lackluster fuel economy, the Commander couldn't compete. Then-struggling Chrysler

decided to forgo a redesign of the Commander when it redid the Grand Cherokee for 2011, although it did stretch the new platform to build a Dodge Durango with a real third row of seats. Ever since, there has been speculation that a restyled Durango could hit the market as a Jeep and that FCA might even dust off the wood-grained vinyl and resurrect the Grand Wagoneer badge.

Of course, this hasn't happened, nor will it. FCA has a different idea, one that could prove more lucrative if it can pull it off: The Wagoneer and Grand Wagoneer will be body-on-frame SUVs, just like the Cadillac Escalades, Lincoln Navigators, and Infiniti QX80s of the world. All real trucks underneath their abundant leather and wood, all commanding big prices. The brand of Wrangler will look to loft the Grand Wagoneer's price into the six figures, with sizing that may follow the GM and Ford two-wheelbase strategy: The Wagoneer will be the shorter model—think Escalade and Navigator—while the Grand Wagoneer grows to compete with the Escalade ESV and the Navigator L.

The Wagoneer's underpinnings will come from the next-gen Ram pickup. The current Ram already has air springs, which we also expect to find in the Wagoneer. FCA has said that the upcoming Ram will also be hybridized, so plan on that, too. Other power-

trains we'll see: A 3.6-liter Pentastar V-6 is a possibility for entry-level models, and the 5.7-liter and 6.4-liter Hemi V-8s may be offered as options.

One powertrain option that seems unlikely to carry forward is a diesel. Shortly after announcing that it would be retooling the Ram truck plant in Warren, Michigan, to build Wagoneers, FCA was issued a Clean Air Act violation notice by the EPA. The diesel V-6 engines currently sold in Jeeps and Rams are alleged to carry software that could act as a defeat device similar to the technology that put Volkswagen in hot water with regulators around the globe. It's far too early to predict what consequences this new development might have for Jeep, let alone the Wagoneer, which is still years away from production. — *Jeff Sabatini*



GATE

POINT OF ORIGIN

ARRIVING

10	M	E	R	C	E	D	E	S	-	A	M	G	2019
	C	63	R										

Mercedes-AMG C63 R

What it is: The ultimate performance C-class, wide-bodied and carbon-fiberized. In the past, AMG might've called it the Black Series, but AMG has begun badging its track-focused models with the letter R. Like the AMG GT R, the C63 R gets more power, loses weight, and benefits from increased downforce due to aerodynamic enhancements.

Why it matters: This expansion of track-focused offerings demonstrates AMG's continued commitment to retina-detaching performance. Also, one of our few gripes with the C63 is that it's heavier than the competition; the R should drop a few pounds.

Platform: A version of the existing C63 architecture lightened with carbon-fiber front fenders and roof. The C63 coupe already uses a wider body than the standard C-class, and because our sources spotted a disguised wide-body C-class sedan in Affalterbach, Germany, AMG's home, our money is on the R being available as both a coupe and a sedan.

Powertrain: Latitude is the AMG twin-turbocharged 4.0-liter V-8's middle name. Though it produces 503 horsepower in the C63 S, it's tuned for an additional 100 horsepower in the E63 S 4MATIC+. Such a significant power increase for the C63 R, however, might necessitate adding the E63's all-wheel-drive system and nine-speed gearbox.

Competition: Alfa Romeo Giulia Quadrifoglio, BMW M4 GTS, Chevrolet Camaro ZL1, Ford Mustang Shelby GT500.

What might go wrong: Very little. This ultimate, double throwdown C-class is likely to be a stiff, track-focused proto-DTM car, with less tolerance for road driving than its more street-compromised siblings. That won't likely hurt it since more lux versions like the C63 and the C43 are available for the less committed.

Estimated arrival and price: New in 2014, the C-class traditionally follows a seven-year product cycle. Special versions like this usually arrive at the end, so the R is probably still a couple of years away, after the C's mid-cycle refresh. And AMG isn't shy about cranking up the sticker. A starting price about 30 percent higher than the C63 S coupe's will put its base price at a nice, round \$100,000.

**Honda Civic Type R**

What it is: A hard-edged Civic track car for the street. Honda doesn't do surprises anymore, so the new R plays to type with big power, a big wing, and a little red H on its nose. More important: no hybrid, no all-wheel drive, and no automatic transmission.

Why it matters: Two decades have passed since the first-generation, Japan-only Type R tantalized readers of *Sport Compact Car*. Ostensibly, those boy racers have grown up to become functioning members of society, and with all the savings they've accrued from not subscribing to dead magazines, they can now afford the buzzbombs of their youthful dreams. The popularity of Gran Turismo-style driving games on every electronic device, save perhaps your internet-connected refrigerator, means maybe some millennials will want a ne plus ultra Civic, too.

Platform: The hatchback that returned to the model lineup for

R

**RECORD:
TITLE FIGHT**

With its 7:50.63 lap time, the last-gen Civic Type R held the Nürburgring record for a front-drive car, that is until a limited-edition VW GTI Clubsport S took the title last year. Look for the upcoming Civic Type R to try to beat that GTI's 7:47.19 lap.



PHOTO ILLUSTRATION: MERCEDES-AMG BY RADOVAN VARICK

GATE

POINT OF ORIGIN

ARRIVING

9	H	O	N	D	A	C	I	V	I	C	2	0	1	7
	T	Y	P	E	R									



the Civic's 10th generation will be the sole body style for the Type R. An adaptive suspension helps maximize the benefits of the stiffer structure, and it allows the Type R to be livable on the street. Curb weight probably won't drop below 3000 pounds, but it should be pretty close.

Powertrain: The new Type R will use the same turbocharged 2.0-liter four that powered the not-for-the-U.S. previous generation. That one made 306 horses but was never federalized, despite being built in Ohio. We could see a small bump in output, but this is still a front-driver, so despite its trick front struts that combat torque steer, more power is probably not what the Type R needs to reclaim its Nürburgring record for wrong-wheel drive. We bet an electronically controlled limited-slip differential will replace

the mechanical one, as the hot hatch will come with three selectable drive modes controlling the steering, suspension, and engine calibrations. A clutch pedal is mandatory, but we'll bet the shift linkage is so polished that it'll seem more like fun and less like work.

Competition: Ford Focus RS, Subaru WRX STI, Volkswagen Golf R.

What might go wrong: A new turbocharged Civic Si is imminent. Not only is that car substantially less expensive, but its sedan and coupe body styles are what car compa-

nies tell us people prefer, even if both formats are also said to be dying. In any case, the Si affords a desirable measure of anonymity in the middle-school dropoff lane that the bespoilered Type R won't. Besides, your wife is already running the numbers on Honda's three sizes of crossovers. Face it, buddy, you're as likely to buy the sophomore Type R as she is to give you a hall pass.

Estimated arrival and price:

The 2018 Type R goes on sale this fall, with expected pricing in the upper-\$30,000 range.



BONEYARD

Some new cars can't get here soon enough, but other models stick around like visiting in-laws, i.e., well after they wear out their welcome. Here are the five longest-lived vehicles still on the market, listed by the year the current generation was introduced in the U.S.



2007 Toyota Tundra,
2007 Jeep Wrangler (tie)



2006 Aston Martin
V-8 Vantage



2005 Nissan Frontier



2002 Mercedes-Benz
G-class



1996 Chevrolet Express/
GMC Savana

GATE	POINT OF ORIGIN										ARRIVING		
8	B	M	W	3	-	S	E	R	I	E	S	2018	
7	A	U	D	I	R	S	5					2017	
6	M	E	R	C	E	D	E	S	-	A	M	G	2019
	P	R	O	J	E	C	T	O	N	E			

BMW 3-series

What it is: The next generation of the quintessential compact sports sedan. BMW has traditionally offered a four-door sedan and a station wagon, but we hope the misleadingly named “Gran Turismo” hunchback will remain without a successor.

Why it matters: The 3-series used to be the car that everyone tried to emulate, but while sales remain strong, it has been surpassed in dynamics, interior quality, and design. With the next gen, BMW has the chance to recapture sports-sedan supremacy. We hear the design will be far more progressive and daring than the current 5- and 7-series, and that’s another step BMW must take.

Platform: Internally called G20, the new 3 will roll on BMW’s new longitudinal-engine platform, internally dubbed CLAR, which stands for “cluster architecture.” It’s lighter than the outgoing model by a good 150 pounds.

Powertrain: Today’s BMW-group engines with more power: 1.5-liter threes, 2.0-liter fours with upward of 250 horses, and 3.0-liter sixes with up to 400. The six-speed manual and ZF eight-speed automatic will carry over. The M3, which will produce close to 500 horsepower, will likely keep its seven-speed dual-clutch auto.

Competition: Alfa Romeo Giulia, Audi A4, Cadillac ATS, Infiniti Q50, Lexus IS, Mercedes-Benz C-class.

What might go wrong: If BMW continues to dumb down the driving experience, the 3 will likely become the Toyota Camry of its segment—a strong seller that traded its soul for volume.

Estimated arrival and price: Mid-2018 as a 2019 model, with pricing close to the current generation’s, meaning the poverty model will start in the mid-\$30,000s.



Audi RS5

What it is: Audi’s monster version of the new A5 coupe. It’s powered by a furious twin-turbocharged V-6, fitted with a rear-biased all-wheel-drive system, and comes wearing a wide body that evokes, for some of us, the original Sport Quattro rally cars. For the first time, there will be a four-door RS5 Sportback; the RS5 cabriolet is gone. Europe gets an RS4 Avant with the same powertrain, but due to the U.S. market’s aversion to wagons, don’t expect it to appear on these shores.

Why it matters: The Audi brand has been suffering from two things: safe, evolutionary styling and the diesel scandal that engulfed the entire Volkswagen Group. It needs nothing more than sexy new product, and the RS5 should prove that the brand hasn’t lost its touch.

Platform: The RS5 is based on the modular, longitudinal-engine MLB Evo platform, shared with the A4, Q5/Q7, the next-gen A6/A7/A8, and a number of VW Group models such as the Chinese-market VW Phideon sedan.

Powertrain: A 450-hp version of the twin-turbo 2.9-liter V-6 that also powers the Porsche Panamera 4S. Peak torque is rated at 443 pound-feet, and the output routes to all four wheels through a ZF-supplied eight-speed automatic.

Competition: BMW M4, Cadillac ATS-V coupe, Lexus RC F, Mercedes-AMG C63.

What might go wrong: The RS5’s exterior design might fail to push Audi’s design language forward.

Estimated arrival and price: Late this year as a 2018 model with a starting price just over \$70K; the Sportback will come a half-year later.

GATE

POINT OF ORIGIN

ARRIVING

5

LAMBORGHINI

2017

PERFORMANTE

Mercedes-AMG "Project One"

What it is: Internally called Project One, this top-level hypercar (think Ferrari LaFerrari and Porsche 918 Spyder) is being designed to mark the pinnacle of race-car engineering with extensive technology transfer from Formula 1. Coincidentally, it will also mark AMG's 50th anniversary. It's not intended to crack top-speed records like the Bugatti Veyron and Chiron, but it is intended to be supremely capable on the racetrack.

Why it matters: It's a halo car that radiates over the entire Mercedes-AMG lineup. AMG will build only 300 units, and rumor has it that more than half are spoken for already.

Platform: AMG's hypercar might be the closest to a Formula 1 racer to be unleashed on public roads since the 1955 W196-based Uhlenhaut coupe. It is influenced by the F1 W07 Hybrid racer and features a carbon-fiber monocoque with room for the driver and one passenger. AMG could be shooting for a weight target of around 2750 pounds, which would make it far lighter than any other current hypercar.

Powertrain: A hybrid unit derived from the Formula 1 racer's PU106C gas-electric warp drive. The turbocharged 24-valve 1.6-liter V-6 revs up to 15,000 rpm in race trim, and the street version will redline well beyond 10,000 rpm. An electric motor with torque-vectoring functionality will drive the front axle, and total system horsepower will exceed 1000. This may be the first streetgoing engine to feature turbulent jet ignition [see "Racing's Little Secrets," March 2017].

Competition: Bugatti Chiron, anything by Koenigsegg, anything by Pagani, anything on Seventh Avenue with two bathrooms.

What might go wrong: A bumper crop of new supercars usually means that a recession is on the way. Our biggest fear is that we'll never get our grubby hands on one of these very rare Benzes.

Estimated arrival and price: Details will emerge throughout the year, but the car itself won't arrive before 2019. The price? About \$2 million.

**Lamborghini Huracán Performante**

What it is: The lightening-and-quickening makeover that Lambo uses to lift the appeal of its models as they approach middle age. The Superleggera name will not return, but the superlight philosophy to which it refers certainly will, meaning the ultimate Huracán will be around 90 pounds lighter, as well as sharper and faster than the regular car.

Why it matters: Despite the heroic magic of its naturally aspirated V-10 engine, the standard Huracán finds itself struggling to keep up, both metaphorically and literally, as Ferrari, Ford, and McLaren embrace turbocharging.

Platform: The Performante will get a version of the Huracán's structure. The car's big trick, though, is its hollow rear wing perched on hollow struts. Air enters at the base of the struts and flows into one of two chambers within the wing, which has two slots on its underside surface to exhaust the air. Flaps at the base of the struts can open independently of each other, providing more downforce to one side of the car or the other depending on which way the car is turning.

Powertrain: The Huracán's glorious V-10 makes 602 horsepower in the all-wheel-drive version, and Lamborghini will likely only be able to eke out 40 more horsepower from the naturally aspirated engine. The Performante will use the same all-wheel-drive system and seven-speed dual-clutch transmission as the standard car.

Competition: Ferrari 488 Speciale, Ford GT, McLaren 675LT.

What might go wrong: Aero trickery might not result in a car that's any more fun to drive.

Estimated arrival and price: Later this year. How's \$350,000 sound?



GATE	POINT OF ORIGIN		ARRIVING
4	FORD	MUSTANG	2017
	SHELBY	GT500	
3	FERRARI	488	2017
	SPECIAL	EDN	
2	McLAREN	BP23	2018

Ford Mustang Shelby GT500

What it is: The most steroidal colt in Ford's stable, with a higher number in its name and more power under the hood than any other production Mustang.

Why it matters: Ford needs an answer to Dodge's 707-hp Challenger SRT Hellcat and Chevy's 650-hp Camaro ZL1.

Platform: For the first time, a factory Mustang Shelby GT500 will have an independent rear suspension. The rest of the mega-Mustang is less groundbreaking: wider tracks, aerodynamic work, fatter tires. As with the previous GT500, this new model wears an enlarged grille with a big lower intake, and the combined visual effect is of gaping holes. Mostly, that maw—along with other various gashes and vents in the GT500's bumper and hood—exists to route cool air to the brakes and engine. But it also looks mean as hell.

Powertrain: Those yawning orifices up front aren't feeding a hamster on a wheel. A big forced-induction V-8 will gulp air through them. Everyone is expecting a twin-turbocharged Coyote 5.0-liter V-8. That's certainly a possibility but would surely sacrifice any pretense of efficiency in order to top the old GT500's 662-hp supercharged 5.8-liter V-8 and the Camaro ZL1's output, let alone mount a dark-horse effort to usurp the Challenger Hellcat's horsepower rating.

To that end, we hear Ford is leaning away from EcoBoost and toward a supercharged, larger-displacement version of the Mustang GT's Coyote. If that sounds a lot like the GT350's 5.2-liter Voodoo V-8, well, that's because it would be, albeit with a conventional 90-degree crankshaft in place of the Voodoo's 180-degree piece, as well as direct fuel injection. Expect both a six-speed manual transmission and a 10-speed automatic co-developed with GM and also used in the ZL1.

Competition: BMW M4, Cadillac ATS-V coupe, Chevrolet Camaro ZL1, Dodge Challenger SRT Hellcat, Mercedes-AMG C63 S coupe.

What might go wrong: It might not be as good on a track as the ZL1, but considering how well the GT350 handles, that seems unlikely.

Estimated arrival and price: Later this year; expect to pay at least \$65,000, more if dealers decide to gouge buyers.



H

HISTORY: SHEL' GAMES

Carroll Shelby gave the 1965 GT350 its name because the race shop and the production shop at Shelby American were about 350 feet apart. There's no significance to the 500 in the original GT500; legend has it that Shelby wanted a bigger number than anyone else's.



PHOTO ILLUSTRATIONS: FORD, FERRARI, AND McLAREN BY RADOVAN VARICAK

Ferrari 488 Special Edition

What it is: Proof of the glorious insecurity that motivates the Maranello folk. The 488GTB already leads its segment in both speed and excitement, but the forthcoming stripped-and-whipped version will be even quicker and more thrilling. Its predecessors have been named Speciale, Scuderia, and Challenge Stradale, but we're predicting *l'ultimo* 488 will carry a different suffix.

Why it matters: Ferrari would never admit it, but the arrival of McLaren has triggered an arms race among supercar makers, and the track-tuned 488's mission is to better the upcoming McLaren 720S in all respects. The regular 488 is already quicker than the previous 458 Speciale, so it's a fair bet that the new car, following Ferrari's recent form, will be truly spectacular.

Platform: It sits on the same aluminum spaceframe as the regular 488, although we can safely predict that Ferrari will shave considerable mass through the use of lightweight materials. If previous Speciales are any indication, it will be at least 200 pounds lighter than the base car thanks to extensive carbonization and the sort of extreme stripping normally reserved for gentlemen's clubs.

Powertrain: This is where it gets interesting—finding out

what Ferrari can extract from the 488GTB's twin-turbocharged 3.9-liter V-8 when the volume is turned up to 11. The last Speciale had 35 more horsepower than the regular 458. Turbos offer the chance to extend that margin greatly, although Ferrari will be keen to retain the regular engine's drivability. The software will be as important as the hardware, with far more aggressive settings expected for the suspension, powertrain, and stability-control system.

Competition: The forthcoming Lamborghini Huracán Performante is aimed at a similar target audience: those for whom regular supercars just aren't super enough.

What might go wrong: Ferrari doesn't fumble much these days, but the most obvious challenge is making sure the engine stays as tractable and progressive as it is in the regular 488.

Estimated arrival and price: The predictable cadence of Ferrari's model plans means we should see the 488 Speciale at the Geneva show this year, going on sale as a 2018 model. The company knows it can charge a substantial premium for its rarest cuts of meat, so don't be surprised to find it's up to \$100,000 more expensive than the 488GTB—somewhere in the mid-\$300,000s for starters.



McLaren BP23

What it is: Possible confirmation of the availability of high-strength psychotropic drugs in the Woking area of England. The BP23 is a three-seat model inspired by the legendary McLaren F1, sharing that car's central driving position and continent-crossing Grand Tourer brief. It's the work of McLaren's Special Operations (MSO) division, and all 106 have already been sold, despite a price tag of more than \$2 million.

Why it matters: It shows that McLaren will continue to pursue interesting (and profitable) niche models for as long as its super-wealthy clientele wants to buy them. We know that the BP23 will have power-operated dihedral doors to ease access to its three-abreast seating layout, with passengers positioned slightly behind the driver as in the F1.

Platform: Like the forthcoming 720S we'll be telling you about soon, the BP23 will be built off the updated Monocage II carbon-fiber tub, which has been designed to make getting in and out easier than it is with McLaren's current lineup. In addition to being more practical, the new structure will be stiffer, stronger, and 40 pounds lighter.

Powertrain: The BP23 will have a hybrid powertrain, like the P1, but details such as the strength of the electric motors and the size of the battery are being kept close to the corporate chest at the moment. We believe the gas-fed bit will be an evolution of McLaren's current twin-turbocharged 3.8-liter V-8 and that the EV part will help total output reach beyond 800 horsepower, nearly as much as the hybrid 903-hp P1.

Competition: Not too much competition in the three-seat megacars category, so we'd wager that the target demographic is just as likely to be considering a Bell 407 helicopter or a Riva

yacht as it is another car. Given that an original McLaren F1 now costs at least \$12 million, you could argue that this one is something of a bargain.

What might go wrong: The first bespoke model from McLaren's Special Ops, the X-1, was pretty hideous, although it was also commissioned by a buyer seemingly determined to drive a baroque Batmobile with carbon-covered rear wheels. We're certain this one will look better.

Estimated arrival and price: Deliveries will likely start in 2018 at approximately \$2 million.



GATE	POINT OF ORIGIN										ARRIVING
1	C	H	E	V	R	O	L	E	T		2018
	C	O	R	V	E	T	T	E	Z	R	1

Chevrolet Corvette ZR1

The Corvette Stingray topped 40,000 sales for the 2016 model year, just cause for celebration. To give the C7 generation a rousing send-off, Chevrolet will pop corks as it resurrects the venerable ZR1 nameplate later this year.

This eminent badge first adorned 53 Corvettes sold from 1970 to 1972 with racing-oriented powertrain and chassis equipment. Legend claims the letters stand for Zora Racer, in honor of Corvette patron saint Zora Arkus-Duntov. Next came 6939 ZR-1 Corvettes from 1990 to 1995 equipped with a Lotus-designed, 375-405-hp DOHC 5.7-liter V-8. The 2009 to 2013 ZR1 (note the hyphen-free spelling) would lose three camshafts and 16 valves but compensated with an additional half-liter of displacement and a supercharger. This third ZR1 delivered 638 horsepower in 4684 copies of the C6 Vette and was the first factory Corvette claimed to be capable of topping 200 mph.



With a tip of its hat to the Dodge Hellcats for smashing the 700-hp ceiling, the 2018 Corvette ZR1 should make 750 or so horsepower from the current 6.2 liters. The additional power comes courtesy of larger intercoolers and more air from the Eaton supercharger, with an assist from retuned direct fuel injection and variable valve timing. Based on our surveillance, the new ZR1 will be offered in both coupe and convertible body styles. We're expecting a choice between a seven-speed Tremec manual transmission and GM's eight-speed automatic.

Even in this day of runaway power and torque, 750 horsepower is nothing to sneeze at. McLaren, Mercedes-AMG, and Porsche currently offer no cars of that caliber. Pagani's Huayra (at 720 horses) and Lamborghini's latest Aventador SuperVeloce (740 horsepower) come close, but Ferrari's F12tdf takes the stogie with 769 horsepower.

To keep the ZR1 in touch with Mother Earth as it crowds its terminal velocity, the Corvette group sought inspiration from Learjet catalogs. The wing jutting proudly from the rear is larger than an ironing board and is manually adjustable. Blended wing-



UPDATE: CHEVY CORVETTE ZORA

The mid-engined C8 is coming, but we don't know exactly when. Our expectation is sometime next year as a 2019 model with a 500-plus-hp 6.2-liter V-8, a dual-clutch automatic transaxle, and an \$80K base price.

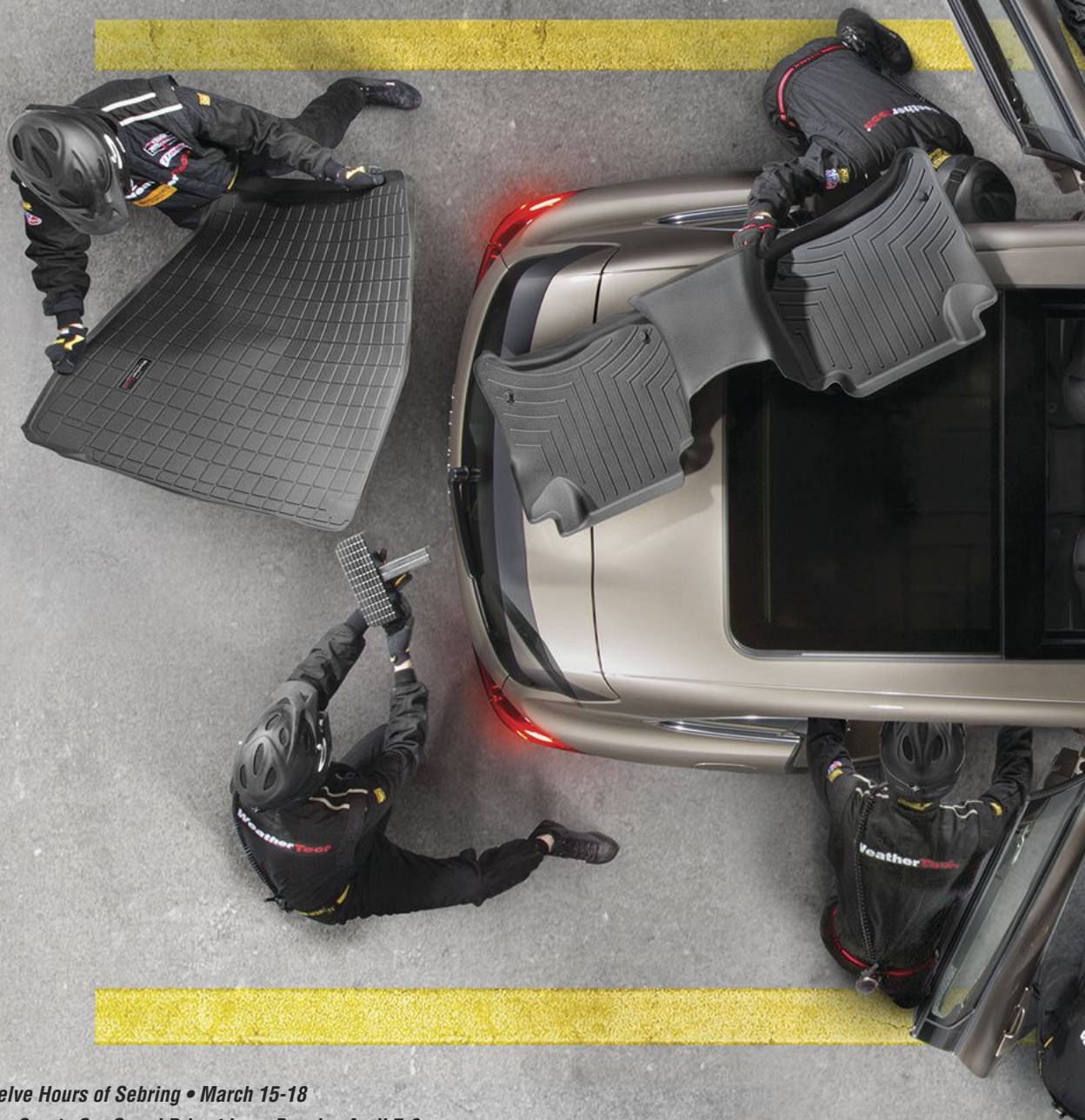
lets at each end of the airfoil improve its efficiency. An aggressive splitter and hood vents trim the front lift.

Chevrolet has not announced exactly when ZR1s will arrive or what they'll cost. This hasn't hindered hard-core Corvette fans from placing their bets with fat dealer deposits. To get some idea of the price, use the following mystery math: It's safe to assume that the new ZR1 will cost more than the 2013 version, which started at \$113,575. Ferrari F12s range between \$323,745 for the Berlinetta and about \$490,000 for the tdf, an average of \$406,873. Divide that figure by 3, the correction factor that typically applies when Chevy combines prancing-horse performance with everyday value. That yields \$135,624, the likely upper limit for the C7 era's last hurrah. —Don Sherman



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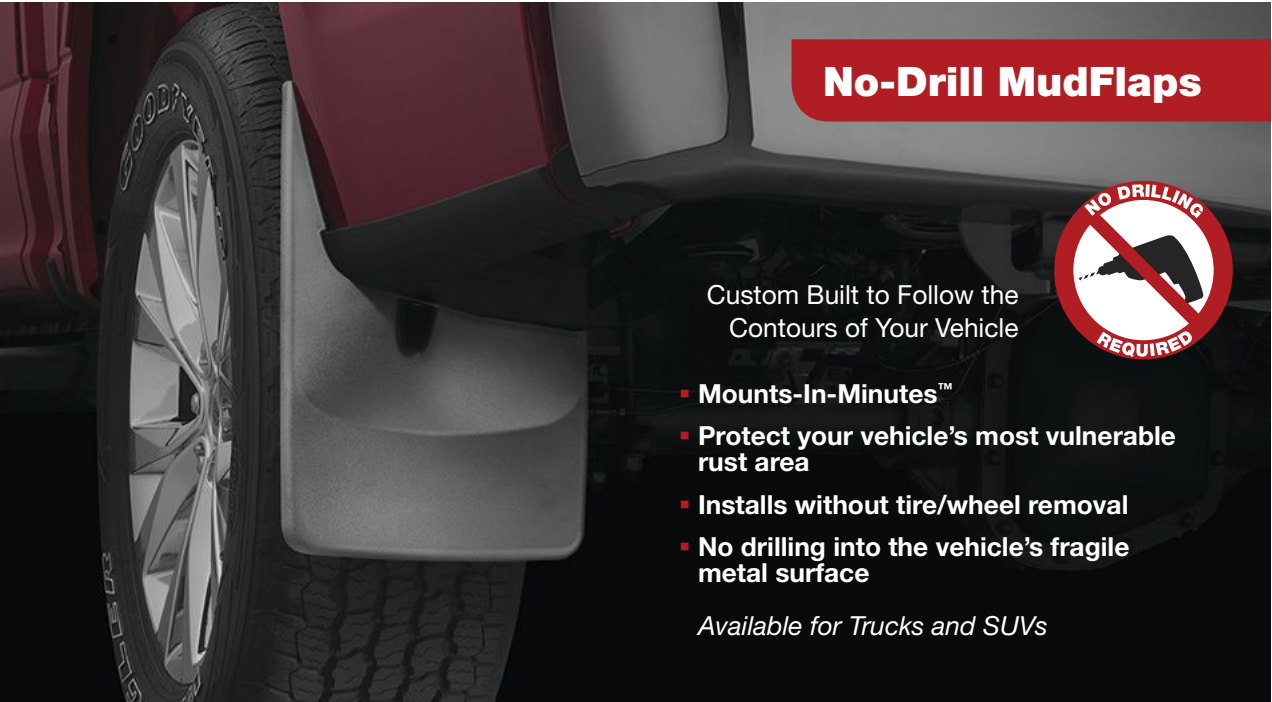
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A photograph showing two large brown paper grocery bags filled with various fruits and vegetables, including tomatoes, bell peppers, and apples. The bags are standing upright on a black, textured mat with several black plastic dividers. The mat is placed on a dark surface, likely the floor of a vehicle's cargo area. The WeatherTech logo is visible on the mat.

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A photograph of a black, rectangular bumper protection device with a textured, grippy surface. It is mounted to a metal hitch receiver. The device has a small WeatherTech logo on its side.

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ONE- WONDERS

WHERE DOES THE VENN DIAGRAM OF
PRACTICALITY, FUEL ECONOMY,
AND AFFORDABILITY OVERLAP? THE HATCH.
DEFINITELY THE HATCH.

—by Aaron Robinson
—photography by Marc Urbano



▲
HONDA CIVIC SPORT
Price: \$22,175 • Power: 180 hp
Torque: 177 lb-ft • Weight: 2868 lb
C/D observed: 31 mpg

CAR

“IF YOU COULD HAVE JUST ONE CAR . . . ?” You’re a car person, so non-car people, who, heaven bless ’em, are just trying to make party conversation, probably ask you this all the time. It’s an absurd question of course, because as every car dude knows, owning just one car is like owning just one sock. But it’s a fun mental exercise and relevant since many of us realistically can’t fit more than one car into our lives.

For this magazine, the ingredients for the One Car are light and tight handling, breezy but not fuel-ravenous power, an efficient interior package that converts quickly from commuter taxi to Home Depot hauler, a manual transmission, and an affordable price that leaves enough dough left over for another car. A convertible maybe, with oil leaks. If BMW would only start an assembly line building low-mileage used E36 wagons, we could end this exercise right here.

Absent that, we submit to you four excellent candidates for mono-auto households. Please note that while they are all hatchbacks, none are crossovers because a tall center of gravity and unnecessary weight do not fit our mission. To this test we mainly invited old friends. Two of our cars, the Mazda 3



▲
MAZDA 3 TOURING 2.5
Price: \$23,330 • Power: 184 hp
Torque: 185 lb-ft • Weight: 2986 lb
C/D observed: 28 mpg



▲
VOLKSWAGEN GOLF WOLFSBURG
Price: \$22,415 • Power: 170 hp
Torque: 184 lb-ft • Weight: 3010 lb
C/D observed: 25 mpg



▲
CHEVROLET CRUZE LT RS
Price: \$22,965 • Power: 153 hp
Torque: 177 lb-ft • Weight: 2881 lb
C/D observed: 26 mpg



We would forgive the Cruze's lack of sporting intentions if its competitors weren't just as practical, inexpensive, and efficient while also being fun to drive.

set but sails in from Mexico (SAD!) as a newcomer intended mainly for overseas markets. We also asked for the new Subaru Impreza, but manual versions were delayed and unavailable at the time. They should be in stores now.

So how do the members of our quartet fit the template? Even the tallest car, the Cruze, at 57.7 inches, is a low flyer these days. The trim Honda scales at 2868 pounds, and the heaviest car, the VW, is just over 3000. Both are modest figures in this day and age. The most expensive, the fairly loaded Mazda 3 Touring 2.5, asks only \$23,330, about a thousand more than the lesser-optioned Chevy and Honda.

The VW proved to be the unlikely racer, using its power and gearing to deliver a sub-seven-second 60-mph time. But all except the snail-slow Chevy were quick enough to merge with verve into a freeway rush. And with a range of 46 to 53 cubic feet of cargo

and the Volkswagen Golf, in their current forms, have already distinguished themselves in past tests. The Honda Civic hatchback is new for 2017, though the platform, introduced last year, is familiar and much approved of in our office. The Chevy Cruze hatchback also rides on a known hardware

Chevrolet Cruze LT RS
[+] Spacious rear seat, good feature count, handsome.
[–] Where art thou, torque? Small hatch hole, dull interior.
[=] Needs more of GM's new momentum.

room, all four hatchbacks had ample interior acreage, though with some key differences.

Just one car? you ask. Here is our somewhat windy answer.

4. CHEVROLET CRUZE LT RS

Badge confusion. The front end says RS, the old Rally Sport designation that first appeared on 1967 Camaros, while the back says LT, which presumably means Luxury Trim or Latte Tote or something. It could mean Lifeless Torque, but we'll get to that in a second.

The fact is, the handsome Cruze hatchback, like the Golf, is more of a family capsule than a funmobile. It drives well enough, with okay steering and restrained body motion, the corners absorbed without much drama and the brakes operated by a steady pedal, but there's no joy in it as there is in the Honda and Mazda. Whereas the Golf feels like a little Mercedes, though, the Cruze just feels like a little Chevy.

Granted, it has the lowest base price, but only by \$60 from the Honda, which has more upscale cabin trim if fewer actual features. In the Cruze, all the touch points are blah, from the plastic steering wheel to the hard-plastic shifter with its giant and incongruously placed reverse-engagement trigger, a fidget that will distract your fingers constantly. The strange dash fabric echoes the Malibu's and is a novel and interesting flourish—the pattern comprises tiny Chevy bow ties, not fish scales as first thought—but too much hard, deep-grain plastic, as predictable in a Chevy as tomorrow's sunrise, swaddles the cabin. A floppy, ill-fitting headliner threatened detachment at any second, and the trim around the hatchback glass was made of two separate and badly aligned plastic sheets that would look sorry in a Lada. We've seen amazing stuff from the new GM, but mostly on the



	2017 CHEVROLET CRUZE LT RS	2017 HONDA CIVIC SPORT	2017 MAZDA 3 TOURING 2.5	2017 VOLKSWAGEN GOLF WOLFSBURG EDITION
PRICE AS TESTED	\$22,965	\$22,175	\$23,330	\$22,415
BASE PRICE	\$22,115	\$22,175	\$23,230	\$22,415
DIMENSIONS				
LENGTH	175.3 in	177.9 in	175.6 in	167.5 in
WIDTH	70.5 in	70.8 in	70.7 in	70.8 in
HEIGHT	57.7 in	56.5 in	57.3 in	57.2 in
WHEELBASE	106.3 in	106.3 in	106.3 in	103.8 in
FRONT TRACK	60.2 in	60.5 in	61.2 in	61.0 in
REAR TRACK	61.1 in	61.1 in	61.4 in	59.8 in
INTERIOR VOLUME	F: 52 cu ft R: 42 cu ft	F: 55 cu ft R: 42 cu ft	F: 53 cu ft R: 42 cu ft	F: 51 cu ft R: 42 cu ft
CARGO BEHIND	F: 47 cu ft R: 25 cu ft	F: 46 cu ft R: 23 cu ft	F: 47 cu ft R: 20 cu ft	F: 53 cu ft R: 23 cu ft
POWERTRAIN				
ENGINE	turbocharged DOHC 16-valve inline-4 85 cu in (1399 cc)	turbocharged DOHC 16-valve inline-4 91 cu in (1497 cc)	DOHC 16-valve Atkinson- capable inline-4 152 cu in (2488 cc)	turbocharged DOHC 16-valve inline-4 110 cu in (1798 cc)
POWER HP @ RPM	153 @ 5600	180 @ 5500	184 @ 5700	170 @ 4500
TORQUE LB-FT @ RPM	177 @ 2000	177 @ 1900	185 @ 3250	184 @ 1600
REDLINE/FUEL CUTOFF	6500/6500 rpm	6500/6700 rpm	6500/6300 rpm	7400/6800 rpm
LB PER HP	18.8	15.9	16.2	17.7
DRIVELINE				
TRANSMISSION	6-speed manual front	6-speed manual front	6-speed manual front	5-speed manual front
DRIVEN WHEELS	front	front	front	front
GEAR RATIO:1/	1 4.27/4.8/31	1 3.64/4.9/33	1 3.70/5.1/32	1 3.78/5.6/38
MPH PER 1000 RPM/	2 2.16/9.4/61	2 2.08/8.6/58	2 1.95/9.7/61	2 2.12/10.0/68
MAX MPH	3 1.30/15.4/100	3 1.36/13.1/88	3 1.30/14.6/92	3 1.27/16.7/114
	4 0.96/20.0/130	4 1.02/17.5/117	4 1.03/19.2/121	4 0.86/24.7/125
	5 0.74/25.2/132	5 0.83/21.5/131	5 0.84/22.7/132	5 0.66/32.2/125
	6 0.61/29.8/128	6 0.69/25.9/131	6 0.68/28.1/132	
AXLE RATIO:1	3.83	4.11	3.85	3.39
CHASSIS				
SUSPENSION	F: struts, coil springs, anti-roll bar R: torsion beam, coil springs	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar
BRAKES	F: 10.9-inch vented disc R: 10.4-inch disc partially defeatable, traction off	F: 11.1-inch vented disc R: 10.2-inch disc partially defeatable	F: 11.6-inch vented disc R: 10.4-inch disc fully defeatable	F: 11.3-inch vented disc R: 10.7-inch disc partially defeatable
STABILITY CONTROL				
TIRES	Goodyear Assurance 205/55R-16 91H M+S	Continental ContiProContact 235/40R-18 91W M+S	Dunlop SP Sport 5000 215/45R-18 89W M+S	Continental ProContact TX 205/55R-16 91H M+S

CAR AND DRIVER TEST RESULTS

ACCELERATION				
0-30 MPH	2.5 sec	2.6 sec	2.4 sec	2.5 sec
0-60 MPH	8.3 sec	7.0 sec	7.4 sec	6.6 sec
0-100 MPH	23.0 sec	17.0 sec	19.3 sec	17.9 sec
0-120 MPH	38.7 sec	27.2 sec	33.3 sec	31.3 sec
1/4-MILE @ MPH	16.4 sec @ 88	15.2 sec @ 94	15.7 sec @ 92	15.3 sec @ 93
ROLLING START,				
5-60 MPH	9.0 sec	7.7 sec	7.7 sec	7.2 sec
TOP GEAR, 30-50 MPH	22.5 sec	11.7 sec	13.5 sec	15.0 sec
TOP GEAR, 50-70 MPH	13.1 sec	8.5 sec	13.0 sec	11.8 sec
TOP SPEED	132 mph (gov ltd)	131 mph (gov ltd)	132 mph (gov ltd)	125 mph (gov ltd)
CHASSIS				
BRAKING, 70-0 MPH	171 ft	160 ft	174 ft	163 ft
ROADHOLDING,				
300-FT-DIA SKIDPAD	0.85 g*	0.93 g*	0.86 g	0.86 g*
610-FT SLALOM	41.4 mph*	44.0 mph*	42.0 mph	42.0 mph*
WEIGHT				
CURB	2881 lb	2868 lb	2986 lb	3010 lb
%FRONT/%REAR	61.3/38.7	59.7/40.3	59.6/40.4	59.7/40.3
FUEL				
TANK	13.7 gal	12.4 gal	13.2 gal	13.2 gal
RATING	87 octane	91 octane	87 octane	87 octane
EPA COMBINED/				
CITY/HWY	31/28/37 mpg	33/30/39 mpg	28/25/33 mpg	29/25/36 mpg
C/D 400-MILE TRIP	26 mpg	31 mpg	28 mpg	25 mpg
SOUND LEVEL				
IDLE	34 dBA	37 dBA	38 dBA	40 dBA
FULL THROTTLE	73 dBA	82 dBA	76 dBA	74 dBA
70-MPH CRUISE	65 dBA	68 dBA	67 dBA	65 dBA

*Stability-control inhibited.



surface or down in the guts. In between, interiors remain the General's weak point.

Another weak point: that engine! On paper, the 1.4-liter is the limpest of our group, and on the road it's just AWOL. The torque shortage had us lifting the hood to see if the engine was indeed shipped with the advertised turbo. Even mild grades forced downshifts, which provoked moans and vibration from the other side of the firewall but not much thrust. The Cruze refused to be launched, its traction control interceding without invitation. Even at 4000 rpm, the maximum revs the computer allows with the clutch depressed, the engine fell down in a coughing fit when the driver dumped the clutch, producing the slowest zero-to-60-mph time in this test by far. It'd be one thing if the Cruze were the fuel-economy champ, but it finished third, with 26 mpg.

Don't say we're biased against Chevy; a Cruze sedan finished third of five last year in a comparison, albeit against softer targets. And the car has merits, including a spacious back seat and a decent spread of

Mazda 3 Touring 2.5
[+] Just lovely, a driving pleasure, upscale inside and out.
[-] Engine is a few beans short, packaging could be better, firmish ride.
[=] The looker in the group gets most of it right.

features for the as-tested price, including a power driver's seat, heated front seats, and a seven-inch high-speed touchscreen with Android and Apple compatibility. But the second-most-expensive car in this test still feels the cheapest, and that's a problem.

3. MAZDA 3 TOURING 2.5

The point totals narrow considerably from here on out. Even on the final day, nobody was certain what the finishing order would be. That's because the Mazda, as with the Honda and VW, fosters ardent fans.

The steering is pure satisfaction, the wheel a tugging, lively telegraph of road pitch and tire adhesion, and the brakes deliver the same thrill of connection. The body, many said, is gorgeous, a simple yet alluring sweep of windblown loveliness that shows especially bright when parked next to the Caliban of our test, the Honda. The 3 is perhaps a high-water mark for design in the inexpensive-car class, and the interior matches with upscale trim and controls that fit into your hands like plugs into sockets.

It wasn't too long ago that you'd need a Porsche to move as quickly as we did in the Mazda through tight curves. Sure, the Honda whupped it on the skidpad and in the slalom, but in the real, eight-tenths world of traffic and guardrails, the Mazda makes time with a confidence that fully masks its humble asking price.

Still a lovely thing to behold and to drive, the Mazda 3 remains a great all-around car. But it's not as zesty as the Honda nor as placid as the Volkswagen.





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So why third? Despite the relatively healthy horsepower and torque figures, this 2.5-liter free-breather doesn't stand up to the turbos closing in from all sides. Neither on power nor on fuel economy, which averaged 28 mpg against the amazing turbo Honda's 31. And getting 185 pound-feet of torque at 3250 rpm is not the same as getting 184 pound-feet at 1600 rpm, as in the VW. All our drivers complained of soft acceleration, especially as we climbed toward our 5900-foot test summit.

The 3's wheelbase ties the Honda's and the Cruze's at 106.3 inches and is longer than the VW's, but somehow the Mazda has by far the tightest back seat. The Mazda also gives you the least amount of cargo space behind the second row. Another small annoyance: a 12-volt socket buried under the armrest far from the windshield, where the radar detectors and aftermarket nav units live. The ride is also

Volkswagen Golf Wolfsburg Edition

[+] Solid bones, gets the business done, the quickest.
[-] Burned the most gas, just a five-speed.
[=] The unflashy choice for the adult who thinks like a German.

busier than the others, with more vertical motion over choppy pavement. A slightly crisp ride shouldn't be a ding in a fun car, unless that car is pitted against other cars that deliver stronger performance with a better ride.

The Mazda is more than a pretty face, but it needed to offer just a little bit more to take our One Car trophy.

2. VOLKSWAGEN GOLF WOLFSBURG

In terms of the quarreling brothers of Steinbeck's *East of Eden*, the Golf is the scrupulous Aron to the Honda's waggish Cal. One is logical and conservative, in Europe a perfectly acceptable choice for an upright family of four, while the other tries to be wild, with flaring faux ducts and silly winglets and imitation carbon fiber. The Golf is an understated box, its cockpit theme evoking a corporate boardroom with dark hues accented by plastic inserts made to look and feel like brushed metal. You don't party in the Golf; you do business.

And that lack of self-aggrandizing theater appeals to some of our testers, especially since the Golf delivers both on the road and at the test track. It feels taller and rolls a bit more than its competitors here,

Dressed in a conservative dark-blue suit, the Volkswagen Golf looks exactly like it drives: dignified and serious. It never wears flip-flops to staff meetings.



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but its motions are fluid and athletic and the body feels particularly solid and, well, German, in soaking up road blight.

It's the most compact car here, the wheelbase shorter than the others by about three inches and the overall length by about 10 inches versus our longest competitor, the Honda. Yet in many ways the VW feels the largest, with a certain big-car stature to its ride and handling. And after producing seven generations, Golf engineers are experts at squeezing the inside millimeters for all they're worth. They raised the rear bench to drop the knees away from the front seatbacks, for example, and delivered the biggest cargo-space number with the rear seats folded.

The long gearing in our test's sole five-speed transmission—again, conservative—means the Golf is guaranteed to be a one-upshift-to-60 car, which helped shave some tenths off its times. The torque is also mighty at the bottom of the tach, the soft-spoken and smooth 1.8-liter TSI making us miss the now-banned TDI just that much less. "It's like an underpowered GTI," summed up senior editor Tony Quiroga, "which is 90 percent as good as a GTI."

Though the Golf's \$22,415 window sticker is entirely option-free, this second-cheapest car here clobbered the others on features, especially small niceties such as auto-down and -up windows on all four doors, front seat heaters, and a 12-volt socket in the

Honda Civic Sport
[+] Marvelous engine, dexterous handling, brilliant space utilization.
[–] Hits a few branches on the ugly tree, manual locks out some options.
[=] Big H finally returns the Civic to form.

trunk, not to mention its automated emergency braking system, blind-spot monitor, and sunroof.

The Golf trades flash for quiet competence and ease of use, even if the fuel economy came in last at 25 mpg despite sharing with the Cruze the narrowest tires in the test. Perhaps a five-speed is indeed one ratio short. Ultimately, this is the excellence we've come to expect from a Golf, but it didn't deliver the delightful surprise of the Honda.

1. HONDA CIVIC SPORT

Judging from reader comments on our website, the bleachers are polarized on Honda's styling job. We're not; we think it's grotesque, especially in red, a hue that makes all that ridiculous black mascara just scream. But, if you like—or can simply get past—its looks, you'll find a touch of genius here, a flash of the old Honda.

It starts with a hatchback opening that is 45 inches wide, more than any other in the test and a significant five inches wider than the Cruze's narrow slot. The lift-over height is just 27 inches; the Cruze makes you lift stuff another six inches to load it in. The Civic's slightly bizarre roofline eats into its cargo space, the flat-roof VW giving you more with the seats folded. But no car gives you better access or uses its interior to give its occupants more space and comfort. Honda also rethought the cargo cover, making it a thin shade that rolls up to the right or left—your choice, as it installs either way. Compare that with the others, which are typical one-piece shingles of compressed soda bottles and rat fur that must be yanked out and left at home if you need to move anything sizable.

The other revelation is the turbo 1.5-liter four, a mill that Soichiro Honda would have put on his mantel. It embarrassed the competitors, all flawed in one way or another, by being strong at the bottom,



With the Civic hatchback, Honda designers have selfishly used up the entire world's supply of exterior styling. It is a great car to drive, though.

smooth on top, sonorous at any speed, and the thriftiest with the gas. Which is good because Honda is the only manufacturer here that recommends 91 octane. It's worth it, though, and given the Honda's outstanding fuel economy on our mountainous drive, it's probably a wash, cost-wise.

Dropped into a Civic chassis rolling on 235/40 Continental tires, the widest rubber in the test, the engine makes magic. The Civic trounced the others in the grip tests of skidpad (0.93 g), braking (160 feet), and slalom (44.0 mph). It also blew the Mazda away in the hills, bringing turbocharged horsepower and more grip to the task, as well as a better ride. It's all managed by light and lubricated controls that are a kick to work from the nattily trimmed cockpit. The CRX is long gone, replaced by many lesser successors, so it's gratifying to see that Honda can still do this stuff when it wants to.

Caveats: Opt for the manual and you get option poverty, even if the thick steering-wheel rim and mushroom-shaped shifter are wrapped in leather. The shifter's movements could be tighter, and the short gearing means the engine turns a busy 3000 rpm at 75 mph, even if economy doesn't seem to suffer. The capless fuel filler always resulted in a small puddle on the ground. Does the EPA know about this? Does the EPA still exist?

So, to the original question, here is our answer: The Honda wins because the Civic is the one car that we'd be happiest driving as our One Car. And it's nice to see that Big H hasn't completely forgotten who it is. ■

FINAL RESULTS

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CAR AND DRIVER

	Maximum points available			
	VW GOLF WOLFSGRUB EDITION HONDA CIVIC SPORT MAZDA 3 TOURING 2.5 CHEVROLET CRUZE LT RS			
RANK	1	2	3	4
VEHICLE				
DRIVER COMFORT 10	9	9	8	8
ERGONOMICS 10	9	9	8	8
REAR-SEAT COMFORT 5	5	3	2	4
REAR-SEAT SPACE* 5	4	5	5	5
CARGO SPACE* 5	3	5	4	4
FEATURES/AMENITIES* 10	4	10	8	7
FIT AND FINISH 10	9	9	10	8
INTERIOR STYLING 10	8	8	9	7
EXTERIOR STYLING 10	6	8	9	8
REBATES/EXTRAS* 5	0	0	0	1
AS-TESTED PRICE* 20	20	20	19	19
SUBTOTAL 100	77	86	82	79
POWERTRAIN				
1/4-MILE ACCELERATION* 20	20	20	18	14
FLEXIBILITY* 5	3	4	4	3
FUEL ECONOMY* 10	10	4	7	5
ENGINE NVH 10	9	9	9	5
TRANSMISSION 10	8	8	10	5
SUBTOTAL 55	50	45	48	32
CHASSIS				
PERFORMANCE* 20	20	17	16	16
STEERING FEEL 10	9	9	9	7
BRAKE FEEL 10	9	8	9	8
HANDLING 10	10	9	9	7
RIDE 10	9	10	8	8
SUBTOTAL 60	57	53	51	46
EXPERIENCE				
FUN TO DRIVE 25	24	22	22	15
TOTAL 240	208	206	203	172

*These objective scores are calculated from the vehicle's dimensions, capacities, rebates and extras, and/or test results.



Long-Term Test: When the tires get worn and the factory warranty runs out, that's where we come in. *Car and Driver* is your source for the 40,000-mile evaluation.

2015 TESLA MODEL S P85D

Arrival: Apr/2015
Departure: Dec/2016

Witnessing change in 36,000 miles, plus one really long road trip. *—by Eric Tingwall*

On April 21, 2015, a Tesla Model S P85D rolled off a transporter in front of *Car and Driver* headquarters, its cherry-red paint spattered with mud as if it had come from its Fremont, California, assembly plant by way of the Oregon Trail. The car's unceremonious arrival belied the magnitude of the moment; the very first electric car to undergo a *Car and Driver* long-term test made the impending seismic shifts facing our industry feel very real and very close. You'll note something similar the day you take delivery of your first plug-in vehicle.

We knew that Tesla was driving massive changes in a century-plus-old industry, but we'd soon be surprised to discover the Model S was itself capable of change. When we took delivery of the car, Tesla was touting 691 horsepower from a car that would practically drive itself—just as soon as the engineers finished writing the software. Plugging the Model S in behind the office,

Rants & Raves

"The heavy regenerative braking works well in this car. I wish all EVs and hybrids had it."
—Mike Sutton

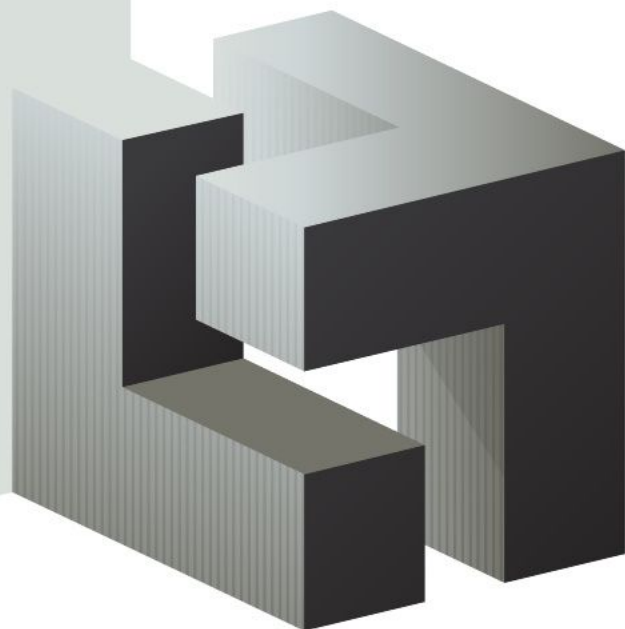
"Autopilot is the first system that convinces me that maybe the autonomous future isn't that far away after all."
—Dave VanderWerp

we could feed the car with our 40-amp circuit, adding 22 miles of predicted range per hour of charging.

Nineteen months later, when our Model S embarked on a 4000-mile sendoff from Ann Arbor to Los Angeles via New York City, the car that completed that journey could steer itself down the highway, its two electric motors were now understood to make a combined 463 horsepower, and the 17-inch touchscreen, twice upgraded by software updates, had learned to plot the necessary high-speed-charging breaks on long-distance routes. Those stops would be dictated by Tesla's network of proprietary Superchargers, which had grown from 188 U.S. locations to 325 during our time with the car, including a station just three miles from our Ann Arbor office. When we needed a quick jolt of electricity, that Supercharger could refill the battery at a rate roughly 10 times faster than that very first charge at 1585 Eisenhower Place. Our Model S was still red when it completed its 40,000-mile tour of duty, but in many ways, it was as if we were living with a different car.

Our P85D (read: performance, 85-kWh battery, dual-motor all-wheel drive) started with a steep \$105,670 base price. We inflated that figure with 21-inch wheels (\$4500), a panoramic glass roof (\$2500), air springs (\$2250), high-capacity onboard chargers (\$1500), red paint (\$1500), and a carbon-fiber spoiler (\$1000). Inside, we splurged on Tesla's aggressively bolstered "next-generation" seats (\$3500), a high-fidelity sound system (\$2500), a rear-facing third row of seats (\$2500), carbon-fiber interior trim (\$800), a cold-weather package (\$750), and a tech package that included the hardware needed to enable Autopilot's self-driving features (\$4250). The final price of \$136,720 is spendy—even by BMW 7-series standards.

Our car's big battery pack made electric living easy. The EPA rates the P85D at 253 miles per charge while our own real-world range test extracted 206 miles during a 75-mph highway cruise. The exact number wasn't as important as the fact that the



**"THIS CAR—WITH ITS QUIETLY
THRILLING ACCELERATION,
HUGE TOUCHSCREEN, AND
POLISHED TECHNOLOGY—FEELS
LIKE THE FUTURE."**

—RUSTY BLACKWELL, ONLINE COPY CHIEF





Model S effortlessly covered our staff's day-to-day demands with plenty of juice to spare. It wasn't off-limits to staffers with long commutes, nor did we ever feel uneasy taking the car for a weekend, when charging was less convenient or assured. There's good reason newer EVs are targeting the 200-mile threshold that Tesla cracked.

We charged at our office every weekday, initially using a 240-volt, 40-amp circuit that required more than 10 hours to replenish the depleted pack. We soon upgraded to a 100-amp line that could push 58 miles' worth of electricity into the car every hour. Those who charge overnight at home can make do with 30- or 40-amp circuits, but we became convinced some form of 240-volt service is required for Tesla ownership, especially in cold-weather climates. Over the course of a 20-degree weekend with minimal charging, one editor saw 134 miles of driving range disappear to warming the battery, heating the cabin, and reduced efficiency. Our Model S rarely enjoyed the warmth of a garage, whether it was plugged in or not, which would have increased the vehicle's overall efficiency and reduced the winter range losses we experienced.

The quiet, smooth Model S is a prolific commuter. In fact, the electric life was so seamless that we concocted a cross-country drive to see how the car performed in an extreme-use case. We wanted to know if an EV could truly replace an internal-combustion-powered vehicle as an only car.

Any trip that requires one or two Supercharger stops is relatively painless. Anything longer, however, quickly becomes tedious. Our coast-to-coast routine involved two or three hours of driving, followed by about 45 minutes of charging, rinse, repeat. We cov-



The 21-inch black wheels wore summer tires. The silver 19s wore all-seasons or winter rubber. Above: People on shrooms should not drive.

ered 3647 miles in four days, spending 57 hours behind the wheel and another 15 hours, 22 minutes plugged in (not including overnight charging). The slightly slower pace necessary (speed kills range) and the frequent extended stops mean a long-haul Tesla travels at Teamster speed. We passed

and drafted familiar trucks for days at a time through middle America, but the real inconvenience is that your meals are dictated by Supercharger locations. Some stops are so bereft of services that you'll yearn for the chance to eat at a Cracker Barrel [see sidebar].

Tesla should be celebrated for building the infrastructure that's crucial to electric-vehicle adoption. No other automaker has made such a commitment. The difference between a Tesla Model S and a Nissan Leaf is as much about the Supercharger network as it is the larger-capacity battery pack.

That, plus eye-popping, neck-straining performance. Tesla admitted that its original 691-hp figure was bogus in September 2015. The motors can churn out that much muscle when juiced from, say

Rants & Raves

"Charging turns a five-and-a-half-hour drive into seven hours."
—Jennifer Harrington

"The cabin heats up faster in this car than in many internal-combustion [powered] cars."
—Kirk Seaman

"The touchscreen responds to pokes and swipes like a five-year-old iPhone that's received three too many operating-system updates."
—Eric Tingwall

"When I began writing this, the odo read 16,061. Now it reads 16,063. Wait, who was driving?"
—Alexander Stoklosa

Service Timeline: I go where I'm towed.

Key: ● - Repairs ● - Damage ● - Maintenance
● - Normal Wear

April 21, 2015
84 miles: Tesla Model S P85D arrives

May 4, 2015
● 1029 miles: Replace left-front tire due to tear in sidewall, \$552

June 30, 2015
● 5705 miles: Replace cracked windshield, \$945

August 20, 2015
● 9427 miles: Car

transported to Tesla's Cleveland service center to address a clicking noise coming from the front-right corner, a roof-rack-mount cover that flips up at speed, and a driver's seat that rubs and squeaks against the center armrest. Technicians torque all suspension fasteners and fix the roof-rack flap, and order a replacement for the bent driver's seat, \$0

October 25, 2015
● 12,100 miles: Attempt by service ranger to install a new driver's seat at our office; strips a bolt trying to remove the old seat, \$0
● The 12,500-mile service involves inspections plus replacing the wiper blades, the cabin air filter, and the batteries in the key fobs. The tech also upgrades our vehicle's firmware,

unlocking Autopilot functionality, \$432

November 2, 2015
● 13,174 miles: Car towed to service center in Cleveland to replace the driver's seat, \$0

November 19, 2015
13,905 miles: Swap to 19-inch Dunlop SP Winter Sport 3D DSST RunOn-Flat winter tires

April 21, 2016
23,272 miles: Reinstall 21-inch Michelin Pilot Sport PS2 summer tires

May 17, 2016
● 25,172 miles: Car hauled to Cleveland. In addition to the tasks performed at the first service, the second includes replacement of the air-conditioning desiccant bag and brake fluid, \$756

● Service center orders another replacement for the creaking driver's seat and seals the tray around the leaking sunroof, \$0

May 24, 2016
● 25,839 miles: Repair bent wheel, \$280

June 17, 2016
● 28,630 miles: Repair rock chip in windshield, \$30





Autopilot, which combines adaptive cruise control, a self-steering lane-keeping program, and automated lane changes (activated by triggering the turn signal). Autopilot can cover scores of highway miles without driver involvement, and yet it occasionally yanked—suddenly and alarmingly—at the steering wheel when it lost the scent of lane markers, causing the vehicle to swerve out of its lane.

Tesla's blind-spot monitor relies on the ultrasonic sensors that most automakers use only as parking-lot spotters. CEO Elon Musk says Tesla prefers this approach because, compared with the radar-based alternative, the sensors work at lower speeds and better detect "soft" objects, such as humans. But ultrasonic sensors have less range than radar, so they can't spot a fast-closing car in the next lane. That makes the automatic lane change a dicey proposition. New Teslas wear eight cameras that provide a 360-degree view around the car, upgrading their lane-changing capabilities.

While the instrument cluster implores the driver to keep their hands on the wheel during Autopilot use, the system's seeming competence easily lulls you into false confidence and dumb behavior such as texting or, in the case of our drivers, writing notes in the car's logbook. There's no doubt that Tesla's Autopilot is more capable than the nervous, lawyer-handicapped systems offered by every other automaker, but it's far from finished. Autopilot's inability to handle all scenarios was highlighted in the May 2016 fatal accident in which a Model S operating on Autopilot broadsided a semi-trailer that crossed the Tesla's path.

We've been promised that EVs will reduce operating costs, but Tesla's service prices don't reflect its vehicles' simplicity. The 12,500-mile maintenance stop involves replacing the cabin air

a nuclear reactor, but the onboard batteries can only send enough power to generate 463 ponies. While correcting the record didn't make the Model S any slower, Tesla's own software did. In January 2017, Tesla admitted that its software limits maximum output after a car exceeds a predetermined number of launches and hard accelerations in order to protect the powertrain. We have no doubt that our adolescent drivers crossed that threshold. The company also said it will remove this protection with the next software update, probably to ward off lawsuits as much as to appease customers. Between its initial and final performance tests, our P85D slowed from a 3.3-second zero-to-60-mph sprint to 3.7 seconds. The quarter-mile stretched another half-second beyond the first run of 11.8 seconds.

Time certainly made our Tesla smarter. A software update in October 2015 enabled

HOW TO TRAVEL FAST AND EAT WELL IN A TESLA

The Model S's embedded trip planner keeps a conservative store of electricity in reserve and favors frequent but short charging. As we crossed middle America, the nav system recommended stopping at almost every Supercharger along our route. But because the charging rate slows as the battery fills, we found it quicker to ignore Tesla's recommendations, drive the car to near empty, and plug it in for only slightly longer charges. Our routine: Drive between 120 and 200 miles at roughly 5 mph over the speed limit, charge for 20 to 45 minutes to a predicted range 50 miles greater than what was needed for the next stint, then get back on the road. We typically arrived at the subsequent stop with 20 to 30 miles of remaining range, although uphill stints caused us to slash our speed or tuck in behind semis on a couple occasions. Starting with 247 miles of range and climbing a little more than 1000 feet over 190 miles into Weatherford, Oklahoma, we rolled to the plug with just two miles of indicated range.

Traveling in this manner requires some advanced planning to know which chargers to visit and which to bypass. We used Google Maps and plugged in our chosen charging stops knowing that we wouldn't risk a run longer than 200 miles.

In hindsight, we would have added one preplanning task: Noting the nearby amenities that are listed on Tesla's Supercharger web page. You can't escape mediocre megachain dining along the Supercharger network, but you can prevent the disappointment of pulling up to a charger at dinner time only to discover that it's located at a secluded hotel. And even the best-planned trip requires a good pair of walking shoes. It often takes a decent hike—sometimes across lawns, through landscaping berms, or along busy roads—to refuel the passengers. —ET



July 28, 2016

31,018 miles: Car trucked to Tesla's Cleveland service center where they replace the driver's front lower control arm to address a clunking noise and clean out the sunroof drain lines to stop the leaking that persists. \$0

August 8, 2016

31,387 miles: Discover both front wheels are

bent; replace worn front tires, \$805

August 17, 2016

32,287 miles: Straighten one front wheel and learn that the other is damaged beyond repair, \$135

August 25, 2016

32,698 miles: Driver's seat replaced at our office, \$0

Service ranger also delivers a new front wheel, \$1188

September 27, 2016

34,174 miles: Repair rock chip in windshield, \$50

November 16, 2016

34,549 miles: Car retrieved by the Cleveland service center to address a clunking front suspension. Technicians

replace the right-front anti-roll-bar end link and the chrome tailgate trim, which is allowing water in the taillights, \$0

December 5, 2016

40,000 miles: Model S finishes its long-term tour

TOTAL COSTS

MAINTENANCE	\$1188
NORMAL WEAR	\$805
REPAIR	\$0
DAMAGE AND DESTRUCTION	\$3180
ELECTRICITY (@ \$0.13 PER KWH)	\$2477

SERVICE

DEALER VISITS (SCHEDULED/UNSCHEDULED)	2/5
DAYS OUT OF SERVICE	25





filter, the windshield-wiper blades, and the key-fob batteries and performing an inspection. It cost \$432. Every second service calls for replacing the brake fluid and the air-conditioning desiccant bag, upping the price to \$756. It appears that even in the electric future, the service department remains a profit center.

For us, service visits were three-day affairs that started with a 180-mile transfer to the Cleveland service center. Michigan's franchise laws prohibit Tesla from setting up direct-to-consumer factory stores here or using its team of mobile rangers to service cars in the state. Tesla did perform some tasks at our office, as it can legally work on company-owned cars in Michigan.

In the big picture, our Model S proved dependable, with none of the showstopping battery or motor failures that troubled some early cars. Several build-quality issues did remind us, however, that Tesla is the youngest automaker by a large margin. Adding to the irritation, the service center was often slow to schedule minor warranty work. Note the three-month lag between ordering and installing the third driver's seat in our Service Timeline. That driver's seat (along with the first replacement) developed enough play in the frame to noisily rub against the center console. Halfway through the test, the sunroof began to leak during rainstorms and required two service visits to correct. The chrome trim on the rear hatch had to be replaced after the original allowed moisture into the taillamps. The 5010-pound P85D also consumed a control arm and an anti-roll-bar end link, and it wore through its Michelin Pilot Sport PS2s in 15,000 miles. We sacrificed one windshield, one tire, and one wheel to Michigan roads.

The Model S's novel and distinctive aura is equal parts Silicon Valley ingenuity and startup naiveté. In its quest to redefine the user experience, Tesla forgot several simple features that we take for granted. There are no grab handles above the doors, no sunshade for the glass roof, and no rear wiper. The fixed rear headrests impinge on rearward sightlines, and our seven-passenger Model S had just three cupholders.

While the in-car technology feels so very of-the-moment, less sophisticated cars better withstand the test of time. Our Model S's 3G modem was outmoded the day it arrived at our office, and the navigation system frequently displayed blank gray tiles while Google Maps loaded. Simpler tasks such as changing radio stations left the impression that the 17-inch touchscreen was aging ungracefully, slowing down the way an old smartphone does. That complaint first appeared in the logbook with just 11,861 miles on the clock, while another driver counted a 10-second lag between tapping the screen and hearing a new station.

Our long-distance road trip highlighted that Tesla's range estimate is consistently optimistic. This discrepancy demanded that the driver perform constant mental math, evaluating how quickly the predicted range was falling



compared with the climbing odometer. Over 40,000 miles, the predicted range dropped 1.4 miles for every mile driven.

We averaged 69 MPGe, well below the EPA's 93 combined MPGe. With electricity at a national average of 13 cents per kWh, running our Tesla cost the same as driving a 38-mpg car with gas at \$2.40 per gallon.

Efficiency, though, seems like one of the less compelling arguments for buying a Tesla. The Model S's appeal lies in the thrill of instant torque, the comfort of seamless acceleration, the tranquility of near-silent idling, and the convenience of at-home refueling. Tesla alone made EVs cool, with its focus on the primal desire for style and performance. We just hope that the company can embrace the kind of continuous improvement we witnessed in the Model S. If Musk can advance its build quality and send a SpaceX rocket to retrieve its pricing from the upper stratosphere, as he intends to with the \$35,000 Model 3, Tesla's transformation from startup to automotive institution will be complete.

With immediately available torque and no need to downshift, the P85D accelerates from 30 to 50 mph in 1.9 seconds. A Bugatti Veyron does it in 1.8.

2015 TESLA MODEL S P85D

PRICE AS TESTED **\$136,720**
BASE PRICE **\$105,670**

VEHICLE TYPE: front- and rear-motor, all-wheel-drive, 5+2-passenger, 5-door hatchback
MOTOR TYPE: 2 AC induction
POWER F: 221 hp R: 416 hp
TORQUE F: 243 lb-ft R: 443 lb-ft
NET SYSTEM POWER **463 hp**
NET SYSTEM TORQUE **687 lb-ft**
BATTERY: liquid-cooled lithium-ion, 85.0 kWh
TRANSMISSIONS 1-speed direct-drive
WHEELBASE 116.5 in
LENGTH 196.0 in
WIDTH 77.3 in
HEIGHT 56.5 in
CURB WEIGHT 5010 lb

WARRANTY

4 years/50,000 miles bumper to bumper
8 years/unlimited miles powertrain
4 years/50,000 miles roadside assistance

MODEL-YEAR CHANGES

2016: Battery capacity changes, Autopilot is activated, various infotainment and instrument-cluster updates, refreshed front fascia.
2017: Autopilot hardware adds five more cameras for 360-degree visual coverage.

CAR AND DRIVER TEST RESULTS

PERFORMANCE

ZERO TO 60 MPH:

NEW 3.3 sec
40,000 3.7 sec

ZERO TO 100 MPH:

NEW 8.6 sec
40,000 9.4 sec

ZERO TO 120 MPH:

NEW 13.4 sec
40,000 14.7 sec

ROLLING START, 5-60 MPH:

NEW 4.1 sec
40,000 3.7 sec

1/4-MILE:

NEW 11.8 sec @ 114 mph
40,000 12.3 sec @ 112 mph

BRAKING, 70-0 MPH:

NEW 161 ft
40,000 161 ft

ROADHOLDING, 300-FT-DIA SKIDPAD:

NEW 0.89 g
40,000 0.91 g

TOP SPEED

160 mph (governor limited)

EPA FUEL ECONOMY,

COMBINED/CITY/HWY 93/89/98 MPGe

C/D-OBSERVED FUEL ECONOMY 69 MPGe

LIFE EXPECTANCIES

(ESTIMATED FROM 40,000-MILE TEST)

TIRES 15,000 miles

FRONT BRAKE PADS more than 100,000 miles

REAR BRAKE PADS more than 100,000 miles

WHAT BITS AND PIECES COST

HEADLAMP \$830

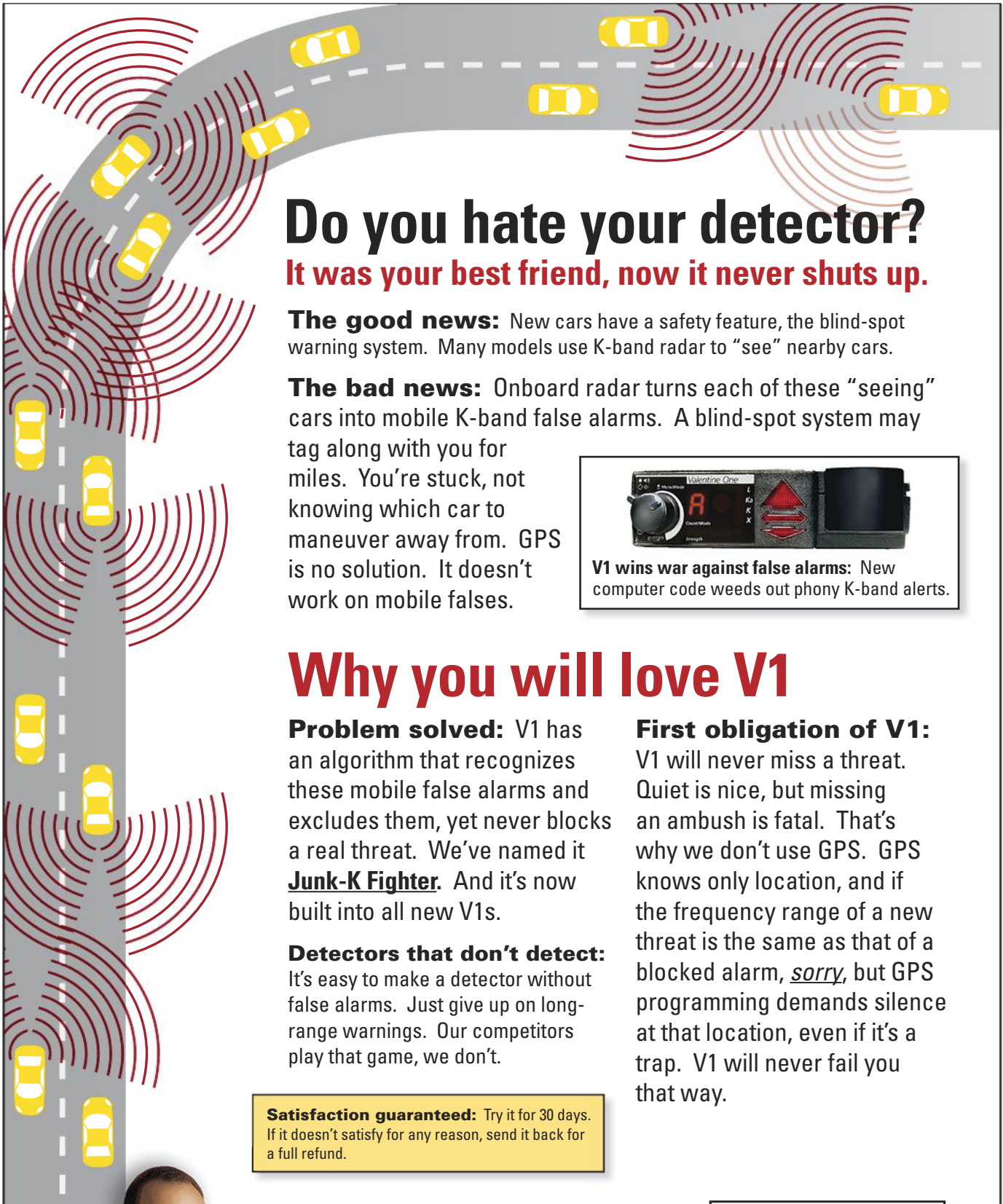
CABIN AIR FILTER \$8

WHEEL (FRONT/REAR) \$1100/\$1150

TIRE (FRONT/REAR) \$300/\$378

WIPER BLADES (LEFT/RIGHT) \$16/\$19

FRONT BRAKE PADS \$207



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Fleet Files:

Here's how our other long-term vehicles are faring in their 40,000-mile trials:



▲ *Newcomer*

2017 JAGUAR XE 35T AWD R-SPORT

Arrival: Sep/2016

Miles: 12,066 Observed mpg: 22

THE LAST TIME JAGUAR shipped a new small sports sedan across the Atlantic, we got the 2002 X-type. We remember the first of these Ford Mondeo-derived disasters to arrive in the press fleet principally because of what the British would call a "leaky boot." American engineers would say its trunk allowed moisture ingress, but it also latched with great difficulty and would sometimes pop open of its own accord. Although our new long-term XE is also a small Jag with all-wheel drive and a V-6 engine, its resemblance to the X-type extends no further than that single letter.

For starters, this one hits 60 mph in under five seconds thanks to 340 horses. Huge 20-inch wheels with staggered summer tires (\$1000) stuck to our skidpad at 0.93 g, while stops from 70 mph took just 147 feet. All in an easy-to-drive, low-key package.

Choosing the \$7500 R-Sport trim didn't add any performance-enhancing stuff, but it did give us sport seats and some safety tech. Another \$6650 in options brought the total to \$59,345. This included a \$2700 Technology package with a 10.2-inch display and a \$2100 Comfort and Convenience package, with its power trunklid. You can't say Jag hasn't learned lessons, even if its past failures have generated long-lasting memories. —*Jeff Sabatini*

2016 Nissan Titan XD Pro-4X Diesel

Arrival: Jul/2016

Miles: 18,650

Observed mpg: 15

Despite having winter conveniences such as remote start and a heated steering wheel and seats, our big Nissan continues to frustrate as it slogs through Michigan's cold and dreary months. Fuel economy has held firm at 15 mpg, and the Cummins V-8 continues to chug about a gallon of diesel exhaust fluid every 1000 miles. Along with two regular service visits for oil and various filter changes (\$749), the most recent checkup also included a second computer update for the still-clunky six-speed auto. The dealer also replaced the tailgate's lock mechanism that broke in the Titan's first few weeks with us. Factor in its ponderous size and general lack of polish, and commuting in the Titan is a chore for even the most unapologetic truck folk. —*Mike Sutton*



2016 Chevrolet Camaro SS coupe

Arrival: Feb/2016

Miles: 24,656

Observed mpg: 19

Winter prep has only made our Camaro more entertaining. Its Pirelli Sottozero Series II winter tires squirm for mercy with every meaningful jab at the throttle, likely prompting this logbook note: "This thing can barely contain its rage. It's a berserker." Yes, it is. When the temperature really drops, drivability suffers. Below 10 degrees, we've observed long cranking times and a gearbox reluctant to engage any gear until it warms. In other news, we paid \$114 for a 22,500-mile service purporting to include an oil and filter change and a new engine air filter. Trouble is, we came away about two quarts shy of the LT1's 10-quart capacity—low enough to produce a dry dipstick. So far, we've observed no ill effects. We could barely contain our rage. —*Josh Jacquot*

2016 Mazda MX-5 Miata Club

Arrival: Oct/2015

Miles: 31,077

Observed mpg: 33

We're sad to report that, as of this writing, our lovable little roadster wears winter tires. The Bridgestone Blizzak LM-60s are great and have helped our Miata remain viable in the frozen nastiness. But it's been too long since we've dropped the Miata's softtop and taken a drive just for the fun of it. It's been all top-up commuting lately. On the upside, slushy commutes only highlight the Miata's tremendous efficiency. We're averaging 33 mpg. And we don't need a 20-seat armored personnel carrier to commute to work alone; two seats work just fine. It would have been nicer had they been heated seats, but still. Our only hiccup was a check-engine light, traced to a bum mass-airflow sensor, which was replaced under warranty at our 20,000-mile maintenance visit. —*Daniel Pund*



2017 BMW M2 COUPE
501 MILES

2017 MAZDA CX-9
4650 MILES

2016 BMW 740i
32,630 MILES

2016 FORD MUSTANG GT COUPE
35,989 MILES

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Crosshatch Patterns

The Mini **Countryman** is cheaper and cooler than its BMW X1 sibling. *by Mike Duff*

▼
ALTHOUGH WE RARELY CELEBRATE the work of the Grim Reaper, we will happily make an exception when it comes to the Mini Paceman. While the first-generation Countryman crossover sold in sufficient volume to warrant development of the successor we're driving here, its ungainly, two-door alleged-coupe sister found more ridicule than buyers. Mini confirms that it won't be making another Paceman, and for that we are genuinely grateful.

The Paceman's demise means the new Countryman will become the priciest Mini,

The 2017 Countryman rides on a new platform and is significantly larger than the last one. Yet, somehow, the new Countryman looks exactly like the old one.

being almost identical to the old car's.

With the exception of the added length of the rearmost side window, this second gen looks as if it were styled with a photocopier's scale conversion. The new Countryman keeps the plastic wheel-arch cladding that automotive designers use as visual shorthand for mall-grade SUVs; its modest ground clearance precludes anything but the gentlest off-road use.

Under the surface, though, much changes. This Countryman follows the rest of the Mini clan by switching from Mini's proprietary platform to BMW's new transverse-engine architecture. Specifically, it's built on the UKL2 platform that also underpins the

performance specials aside, with its segment-spanning purpose undergirded by a serious expansion in size. The first Countryman was big when compared with the bijou Mini hatchback of the day, but it was still pretty compact, even by compact-crossover standards. Owners and potential buyers told Mini they wanted it to be bigger and more practical.

Which is why the new Countryman grows by 8.5 inches in length and 2.9 in the wheelbase. Yet the expansion isn't immediately obvious when you look at it, the side-on proportions

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[+] Roomier and more comfortable than its predecessor, improved ride, available manual transmission. [-] Still wants to be a hot hatch, function remains compromised by form.

closely related BMW X1, which is basically the Countryman's strait-laced cousin.

The engine choices won't burden U.S. buyers since only two, both shared with other Minis, are available at launch. The entry-level Cooper gets a turbo 1.5-liter three-cylinder with 134 horsepower. The Cooper S has the 189-hp 2.0-liter four, which it shares with the X1, though it sees 39 less horsepower than the BMW. Europe gets diesels, including the option of a three-cylinder version, but there are no plans to bring these to the States. Front-drive is standard, but ALL4 all-wheel drive is an option on both versions. A six-speed manual is available in most trims, and a six- or eight-speed automatic is available on

every model. A brawnier 228-hp John Cooper Works version will follow close behind, with a plug-in-hybrid Cooper SE ALL4 later in the year.

We'd love to give you the comprehensive lowdown on all of 'em, but the only car we were able to drive on the launch in England was a fully loaded Cooper S ALL4 equipped with the eight-speed auto.

The cabin is more spacious and less gloomy than its predecessor's, with better fit and finish and genuine evidence of ergonomic planning, which is new for Mini. As in the current hatch, there are still some hard-to-see, low-mounted toggle switches, apparently riffing on the original 1959 BMC Mini and a fair bit of "different to be different" design. The rounded navigation screen, trimmed to fit in the circular central binnacle, is a styling cue that we suspect

a middle-aged designer thought would appeal to millennials. Practical considerations get their due, though, with generous space front and rear. The driving position is raised, as you'd expect for a crossover—it's not quite SUV-commanding but it's certainly assertive. There's also adult-viable room in back with wear-a-hat head space, a respectable 18 cubic feet of luggage volume behind the raised second-row seats, and 48 cubes with them stowed.

It drives as you'd expect, like a big, fat Mini wearing extra ride height. Yet it also moves with considerably more dynamic polish than its predecessor. The first Countryman rode as if it were being frog-marched down a pier in concrete boots, but this one copes far better with undulating surfaces, even on the Cooper S's standard 18-inch aluminum wheels. It's still firm, but there's a newfound compliance that helps it ride out moderate bumps without being thrown off course.

tale of the tape

SISTER ACT

■ 2017 MINI COUNTRYMAN COOPER S ALL4
■ 2017 BMW X1 xDRIVE28i

BASE PRICE

\$31,950

\$36,095

POWER

189 hp

228 hp

LENGTH

169.8 inches

175.4 inches

CARGO VOLUME, REAR SEATS UP/DOWN

18/48 cubic feet

27/59 cubic feet

PASSENGER VOLUME

97 cubic feet

101 cubic feet



Drivelines



“Go-kart handling” still isn’t a tired cliché in the Mini playbook, however. The new Countryman’s right-now steering response doesn’t really suit the rest of its crossover character. Like a proper hot hatch, it dives for apexes with the smallest of steering inputs. But beyond this initial enthusiasm, there’s little of the involvement or adjustability that its smaller sisters manage, the driven rear axle still unable to supply much help as the front end runs wide on tight or greasy corners. It handles faster turns with more aplomb, feeling impressively stable and planted at higher speeds. But cruising is loud, with a surprising amount of road roar and wind noise penetrating the cabin.

The 2.0-liter engine isn’t short on poke, but its efforts are blunted by the Cooper S’s 3671-pound claimed weight. We suspect

The Countryman’s cargo hold seems mini, but it’s as big as those of most other minis. Still Mini-silly, the Countryman’s interior is at least nicer than before.

that the three-cylinder Cooper is going to feel pretty leisurely. The bigger engine’s strong midrange torque and some intelligent shifting from the eight-speed auto make the S feel respectably brisk most of the time, but pushing harder reveals the engine’s lack of lungs at higher revs. Anybody in search of a genuinely rapid Countryman will have to wait a month and pay several grand more for the John Cooper Works version.

Prices open modestly at \$26,950 for the entry-level Cooper front-driver, which includes a panoramic glass sunroof and convincing-enough leatherette upholstery, and rise to \$31,950 for the Cooper S ALL4, so there’s little doubt the Countryman will do well. It will be more deserving of its success than its lackluster predecessor, which accounted for a quarter of Mini’s U.S. sales last year despite its flaws. The Countryman remains a confused car, a pudgy wannabe athlete that is trying to bridge the streams of crossover and performance hatch. But it’s also a generally likable quasi-crossover, and for many potential buyers that will be enough.

2017 MINI COUNTRYMAN

VEHICLE TYPE: front-engine, front- or all-wheel-drive, 5-passenger, 4-door hatchback

BASE PRICE: \$26,950–\$31,950

ENGINES: turbocharged and intercooled DOHC 12-valve 1.5-liter inline-3, 134 hp, 162 lb-ft; turbocharged and intercooled DOHC

16-valve 2.0-liter inline-4, 189 hp, 207 lb-ft

TRANSMISSIONS: 6-speed manual, 6-speed automatic with manual shifting mode, 8-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 105.1 in

LENGTH: 169.8 in

WIDTH: 71.7 in

HEIGHT: 61.3 in

PASSENGER VOLUME: 97 cu ft

CARGO VOLUME: 18 cu ft

CURB WEIGHT: 3300–3700 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 7.2–9.4 sec

ZERO TO 100 MPH: 20.0–22.5 sec

1/4-MILE: 15.8–18.0 sec

TOP SPEED: 124–140 mph

FUEL ECONOMY

EPA COMBINED/CITY/HWY: 23–27/20–24/29–33 mpg (C/D est)





TESTED

The Red Pill

Infiniti's **Q60 Red Sport 400** finds middle ground.
by Jeff Sabatini

▼ **THERE ARE NOW MORE LUXURY SPORTS COUPES** on the market than at any time in recent memory. But only one offers 400 horses with a base price in the \$50,000 range: Infiniti's new Q60 Red Sport 400. As with the competition from Audi, BMW, Cadillac, Lexus, and Mercedes-Benz [see sidebar], Infiniti also offers a base model with a turbocharged 2.0-liter four. However, it's the twin-turbo 3.0-liter V-6 that raises the Q60's red mist. A 300-hp tune is standard, but tack \$3000 onto the sticker and Infiniti turns the boost up from 8.7 to 14.7 psi, delivering the extra ponies that put the Red Sport into that space between a standard offering and a dedicated performance variant like a full AMG or M car. At least on paper.

Infiniti wraps this powerful engine with gorgeous sheetmetal that turns heads and generates lingering stares. To the layman, it looks like a Ferrari, which is precisely the point. Underneath its ample curves, however, 58.6 percent of its 4066 pounds rests on the front axle. You feel it on the road in the way the front end pounds the pavement and the way the Q60 pushes into corners.

Part of our test car's reluctance to turn is its all-wheel-drive system, a \$2000 option that adds 161 pounds to the curb weight, according to the manufacturer's specs, but no additional fun to the driving experience. Ordering all-wheel drive also means trading staggered summer tires for square all-seasons. This fitment was able to generate 0.88 g on our skidpad, which, in Infiniti's defense, is right in line with the competition. The tires did no harm to braking, stopping the car from 70 mph in 164 feet, or one foot less than we measured for a Q50 sedan riding on summer rubber.

[+] Beautiful lines and a beastly engine. [-] Nose heavy, understeers, no manual option.

Infiniti largely remedied the artificial feel that plagued its by-wire Direct Adaptive Steering (a \$1000 option) in this second generation of the technology. Next up on its list of improvements should be a proper manual transmission, as the seven-speed automatic in the Q60 doesn't have the reflexes necessary for a car of this sort, paddle shifters notwithstanding.

Still, excessive horsepower absolves plenty of engineering sins. See: The enduring and ubiquitous popularity of Chevy small-block transplants. This new Infiniti needs nothing of the sort, as even the kind of crazy who would bolt a crate engine to a pogo stick will be impressed with the way this V-6 quickly spins past 7000 rpm. Its 133.5 horsepower per liter is enough to shoot the Q60 through the quarter-mile in an exhilarating 12.9 seconds. Going fast in a straight line is always fun.

tale of the tape

ALL THE PRETTY HORSES

The Q60 charges less for each of its ponies than its competitors do:

2017 INFINITI Q60 RED SPORT 400 AWD

400 hp
\$54,205

2017 CADILLAC ATS COUPE 3.6 AWD

335 hp
\$49,990

2017 LEXUS RC350 AWD

306 hp
\$46,170

2017 MERCEDES-AMG C43 4MATIC COUPE

362 hp
\$56,425

2018 AUDI S5

354 hp
\$56,000 (C/D est)

2017 BMW 440i xDRIVE COUPE

320 hp
\$51,495

Dollars per horsepower

\$136

\$149

\$151

\$156

\$158

\$161

2017 INFINITI Q60 RED SPORT 400 AWD

VEHICLE TYPE:

front-engine, all-wheel-drive, 4-passenger, 2-door coupe

PRICE AS TESTED: \$62,355

BASE PRICE: \$54,205

ENGINE TYPE:

twin-turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection

DISPLACEMENT: 183 cu in, 2997 cc

POWER:

400 hp @ 6400 rpm

TORQUE:

350 lb-ft @ 1600 rpm

TRANSMISSION:

7-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 112.2 in

LENGTH: 184.6 in

WIDTH: 72.8 in

HEIGHT: 54.9 in

PASSENGER VOLUME:

86 cu ft

TRUNK VOLUME:

12 cu ft

CURB WEIGHT: 4066 lb

C/D TEST RESULTS

ZERO TO 60 MPH:

4.5 sec

ZERO TO 100 MPH:

10.6 sec

ZERO TO 130 MPH:

18.9 sec

ROLLING START, 5–60

MPH: 5.0 sec

1/4-MILE:

12.9 sec @ 111 mph

TOP SPEED: 150 mph

(governor limited)

BRAKING, 70–0 MPH:

164 ft

ROADHOLDING,

300-FT-DIA

SKIDPAD: 0.88 g

FUEL ECONOMY

EPA COMBINED/CITY/

HWY: 21/19/26 mpg

C/D OBSERVED:

18 mpg

Shell
V-Power
NITRO+
Premium Gasoline

The Official Fuel of
CAR AND DRIVER

Drivelines

HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES

PITTSBURGH AUTOMOTIVE

SUPER COUPON



1 TON CAPACITY FOLDABLE SHOP CRANE
ITEM 69445/61858
69512 shown

Customer Rating ★★★★★

- Includes Ram, Hook and Chain

SAVE \$169

SUPER COUPON \$999 ~~\$179.99~~
comp at \$269

37749597

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ANY SINGLE ITEM

Limit 1 coupon per customer per day. Save 20% on any 1 item purchased. *Cannot be used with other discount, coupon or any of the following items or brands: Inside Track Club membership, Extended Service Plan, gift card, open box item, 3 day Parking Lot Sale item, compressors, floor jacks, saw mills, storage cabinets, chests or carts, trailers, trenchers, welders, Admiral Buses, CoverPro, Daylana, Earthquake, Hercules, Jupiter, Lynox, Predator, StormCat, Talgator, Viking, Vulcan. Not valid on prior purchases. Non-transferable. Original coupon must be presented. Valid through 7/7/17.

37756267

SUPER COUPON

FREE

WITH ANY PURCHASE

4" MAGNETIC PARTS HOLDER
ITEM 62535
90566 shown

\$5.99
VALUE

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PITTSBURGH AUTOMOTIVE

SUPER COUPON



3 TON HEAVY DUTY STEEL JACK STANDS
Customer Rating ★★★★★
ITEM 61196
62392/69597
38846 shown

SAVE 48%

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comp at \$34.99

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CHICAGO ELECTRIC POWER TOOLS



ITEM 69606/61173
68099 shown

1/2" ELECTRIC IMPACT WRENCH

Customer Rating ★★★★★

SAVE \$130

SUPER COUPON \$399 ~~\$499~~
comp at \$169.99

37766169

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PITTSBURGH AUTOMOTIVE

#1 SELLING JACKS IN AMERICA



RAPID PUMP® 1.5 TON ALUMINUM RACING JACK
ITEM 69252/68053
62160/62496/62516
60569 shown

Customer Rating ★★★★★

- 3-1/2 Pumps Lifts Most Vehicles
- Weights 34 lbs.

SAVE \$70

SUPER COUPON \$599 ~~\$799~~
comp at \$129.99

37753064

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CENTRALPNEUMATIC

SUPER COUPON



ITEM 69091/61454
61693/62803
67847 shown

2.5 HP, 21 GALLON, 125 PSI VERTICAL AIR COMPRESSOR

Customer Rating ★★★★★

SAVE \$296

SUPER COUPON \$14999 ~~\$17999~~
comp at \$446.61

37747178

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US GENERAL

SUPER COUPON



ITEM 69397
61427/63308
95272 shown

30", 5 DRAWER TOOL CART

Customer Rating ★★★★★

SAVE \$240

SUPER COUPON \$15999 ~~\$17999~~
comp at \$399.99

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PITTSBURGH AUTOMOTIVE

SUPER COUPON



NEW VEHICLE POSITIONING WHEEL DOLLY
ITEM 62234
61917 shown

Customer Rating ★★★★★

SAVE \$210

SUPER COUPON \$699 ~~\$899~~
comp at \$279.99

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CENTRAL MACHINERY

SUPER COUPON



ITEM 33497
60604 shown

12 TON SHOP PRESS

- Pair of arbor plates included
- Raise and lower table for the best working distance possible

Customer Rating ★★★★★

SAVE \$79

SUPER COUPON \$999 ~~\$12499~~
comp at \$179

37756782

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PITTSBURGH AUTOMOTIVE

SUPER COUPON



ITEM 61160/61896/63456
46319 shown

PNEUMATIC ADJUSTABLE ROLLER SEAT

Customer Rating ★★★★★

SAVE 50%

SUPER COUPON \$1999 ~~\$2599~~
comp at \$39.99

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PREDATOR GENERATORS

SUPER COUPON



ITEM 69676/69729/63080/63079 shown
ITEM 69675/69728/63090/63089

4000 PEAK/3200 RUNNING WATTS 6.5 HP (212 CC) GAS GENERATORS

Customer Rating ★★★★★

- 70 dB noise level CALIFORNIA ONLY
- Wheel kit sold separately.

SUPER COUPON \$2899 ~~\$3399~~
comp at \$439

37768581

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SUPER COUPON



LED WORKLIGHTS
A. 27 LED
ITEM 69567/60566
62532/67227 shown
B. 39 LED
ITEM 62417/62574
62158 shown

Customer Rating ★★★★★

SAVE 71%

SUPER COUPON \$299 ~~\$399~~
comp at \$10.64

37753376

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drillmaster

SUPER COUPON



ITEM 62827 shown
69652/62872/62869

18 VOLT CORDLESS 3/8" DRILL/DRIVER AND FLASHLIGHT KIT

Customer Rating ★★★★★

- Includes one 18V NiCd battery and charger.

SAVE 74%

SUPER COUPON \$2499 ~~\$2799~~
comp at \$79

37749322

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BADLAND

SUPER COUPON



ITEM 61256/61889/60813 shown

12,000 LB. ELECTRIC WINCH WITH REMOTE CONTROL AND AUTOMATIC BRAKE

Customer Rating ★★★★★

SAVE \$453

SUPER COUPON \$2999 ~~\$752.99~~
comp at \$279.99

37762938

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HaulMaster

SUPER COUPON



ITEM 66537 shown
69505/62418

72" x 80" MOVING BLANKET

Customer Rating ★★★★★

SAVE 66%

SUPER COUPON \$599 ~~\$899~~
comp at \$17.97

37751643

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Canyonero? No

Looks can deceive. With its **Niro hybrid**, Kia's betting on it. _by Bengt Halvorson

▼ **SAY "KIA NIRO"** three times quickly and it can sound like "Canyonero," that fantastically flawed 35-seat sport-utility vehicle from *The Simpsons*, a vehicular ode to glorious excess gone awry. The new Niro is essentially the polar opposite of that—a lean, frugal wagonoid, albeit with a twist of the upright and rugged.

From across the parking lot, the Niro's modern crossover proportions, bright accents, and brawny, blacked-out lower body tease utility-vehicle allegiances. But step close and it's abundantly clear that the Niro is instead a tidy hatchback with a tall roofline. There's no all-wheel drive to be found in the Niro, and, depending on trim, its window sticker boasts an EPA combined fuel-economy rating of up to 50 mpg. The Niro is the eco geek of Kia's lineup, built on the same dedicated hybrid/electric platform as the Hyundai Ioniq. But with its SUV look, it's definitely trying to keep its fuel-saving mission on the low-down. That makes it a kind of counterpoint to the Prius-like Ioniq, which apes the Toyota's familiar wind-cheating, Kamm-back styling to maximize every drop of fuel at the expense of interior acreage.

[+] Handsome quasi-ute styling, spacious and straightforward interior, 50-mpg rating. [-] Still slow, defaults to sluggish eco mode, your mileage may vary.

Kia sandwiches a single electric motor between the Niro's superefficient 1.6-liter four and its six-speed dual-clutch gearbox [see tech highlight], and most of the time the arrangement is harmonious. You hear shifts but barely feel them, with the motor finessing it all into one smooth torque flow. Kia doesn't have all that much experience with hybrids, but it's already nailed one of the toughest parts of making one feel right: brake blending. The Niro transitions seamlessly from regenerative to friction braking during the last few feet before stopping. The steering has decent weight and on-center feel—better, it seems, than many of the Korean brand's models that aren't quite so eco-friendly.

But the gearbox and hybrid system sometimes fret over American-style rolling stops, with occasional indecision and sounds unbecoming of a modern car. And the Niro is confoundingly sluggish in its default eco mode, far more so than its combined output of 139 horsepower and 195 pound-feet of torque would suggest for this

2017 KIA NIRO

VEHICLE TYPE: front-engine, front-motor, front-wheel-drive, 5-passenger, 4-door hatchback

BASE PRICE: \$23,785

POWERTRAIN: DOHC 16-valve 1.6-liter Atkinson-cycle inline-4, 104 hp, 109 lb-ft; permanent-magnet synchronous AC motor/generator, 43 hp and 125 lb-ft; combined system output, 139 hp, 195 lb-ft

BATTERY: air-cooled lithium-ion, 1.6 kWh

TRANSMISSION: 6-speed dual-clutch automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 106.3 in

LENGTH: 171.5 in

WIDTH: 71.1 in

HEIGHT: 60.4 in

PASSENGER VOLUME: 100 cu ft

CARGO VOLUME: 19 cu ft

CURB WEIGHT: 3200 lb

PERFORMANCE

(C/D EST)

ZERO TO 60 MPH: 10.5 sec

ZERO TO 100 MPH: 32.0 sec

1/4-MILE: 17.9 sec

TOP SPEED: 101 mph

FUEL ECONOMY

EPA COMBINED/CITY/HWY: 43-50/46-52/40-49 mpg

Drivelines

tech highlight

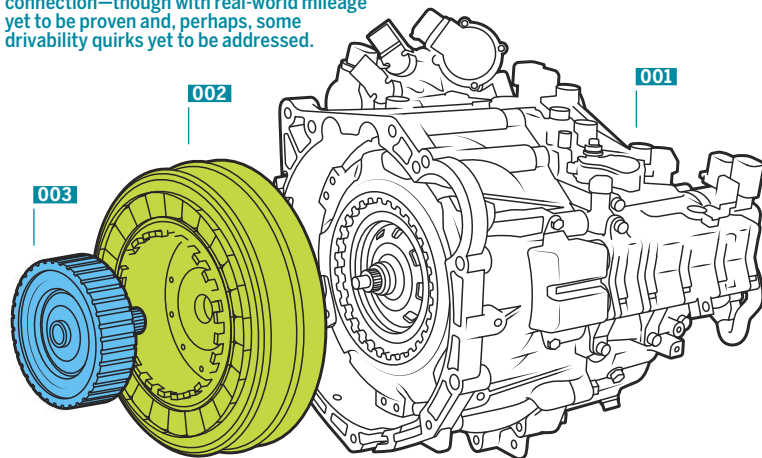
SIR MIX-A-LOT

Kia's new hybrid system in the Niro (and the closely related Hyundai Ioniq) addresses one of the most common complaints about hybrids: the motorboat effect—or the disconnect between engine and vehicle speeds. It does so by replacing a continuously variable transmission with something a lot more straightforward: stepped gears. The Niro, in its most efficient versions, manages EPA fuel-economy numbers that rival those of the Prius, while reclaiming at least some of that connection between engine and tarmac.

The starting point is a compact, low-friction dual-clutch six-speed automatic with hydraulically actuated dry multiplate clutches (001). Kia's latest 1.6-liter Kappa engine, making 104 horsepower and 109 pound-feet of torque, is the other key component in this new setup. With a long-stroke design, separate cooling circuits for the head and block, a higher-rate exhaust-gas-recirculation system, and a 13.0:1 compression ratio, this Atkinson-cycle engine allegedly hits a lofty 40 percent thermal efficiency, rivaled only by Toyota's efforts in the latest Prius (and now Camry hybrid) and by diesel engines.

A 1.6-kWh battery pack fits under the back seat, and a 43-hp AC synchronous electric motor/generator (002) mounts to the transmission's input shaft. A third dry multiplate clutch (003) housed inside the motor/generator connects the combustion engine to the same shaft, allowing the engine to strategically add motive force. Through mind-bogglingly complex software maps and controls, the system coordinates when the engine decouples and whether the motor drives the wheels or acts as a generator.

Torque from the motor allows tall gearing and smooth, all-electric launches. The system is neatly packaged and improves the driver/car connection—though with real-world mileage yet to be proven and, perhaps, some drivability quirks yet to be addressed.



roughly 3200-pound vehicle. Slide the shift lever to the sport gate for sharper responses and keep it there if you have any love of driving (and the judge has confiscated your Porsche and ordered you to drive this). Engine braking is in short supply any way you work it, though, and the lack of a tach speaks volumes about this Kia's priorities.

The Niro's dash and doors get finished with soft-touch materials and a few thin lines of blue trim to remind you of this model's eco focus. The front seats afford good forward sightlines while the rears have enough head- and legroom for taller adults. The split rear seatbacks fold forward to create a flat load floor.

Kia has sent us a nearly decade-long hit parade of handsomely styled, smartly equipped vehicles that cost less than you might expect. The Niro's price of entry undercuts the Prius's base price by \$1765. And there's more of this lineup waiting in the wings: A plug-in-hybrid version arrives this fall, and a pure-electric Niro makes its debut in 2018.

Hybrids never needed to be weird, and we think Kia has the right idea, grabbing a platform conceived for high mileage and scrapping the penalty-box-form factor, instead dropping on a pragmatic body with its own appeal. It's an especially smart move now, as the price of gas probably won't be spiking anytime soon. No, the Niro isn't completely charming, but if this is the face of an excess-free future, it's one that many of us can embrace.





A New Heading

More capable off-road and more comfortable on-road, Jeep's new-for-2017 **Compass** comes of age. Sort of. *—by Greg Fink*

THE ALL-NEW 2017 Jeep Compass just squeezes into the 15.4-inch gap between Jeep's wee Renegade and its mid-size Cherokee. Built on the same "small-wide 4x4 architecture" that underpins the bug-eyed Renegade, the Compass's wheelbase grows 2.6 inches, the new ute casting a shadow 6.4 inches longer than its smaller sibling.

The additional space between the Compass's axles affords a decidedly refined ride and, when whipped, the little Jeep doesn't embarrass itself dynamically. Over the pockmarked and twisting back roads just outside Hollister, California, the Compass felt secure and composed as a result of its limited body roll and appropriately weighted, if aloof, steering. While brake dive was minimal, the brake pedal proved touchy. This ute is, however, quieter and better finished inside than its box-shaped little brother, and it drives smaller than the Cherokee because, well, it is.

Upping the wheelbase and increasing the length give the Compass both a roomier back seat and a larger cargo hold than the Renegade's. With 38.3 inches of legroom, and up to 60 cubic feet of cargo capacity with the split rear seatback folded, the Compass delivers 3.2 additional inches of leg-stretching space and 9 more cubic feet of storage room relative to the Renegade.

Available in Sport, Latitude, Trailhawk, and Limited trims, all Compasses are motivated by a 2.4-liter inline-four with 180 horsepower and 175 pound-feet of torque. A six-speed manual is standard on Sport and all-wheel-drive Latitude models, and two automatic transmissions are available: a six-speed on front-drive Compasses and a nine-speed on all-wheel-drive models, the latter of which Jeep supplied for our drive. Thanks to the engine's weak top end and the transmission's hesitancy to down-

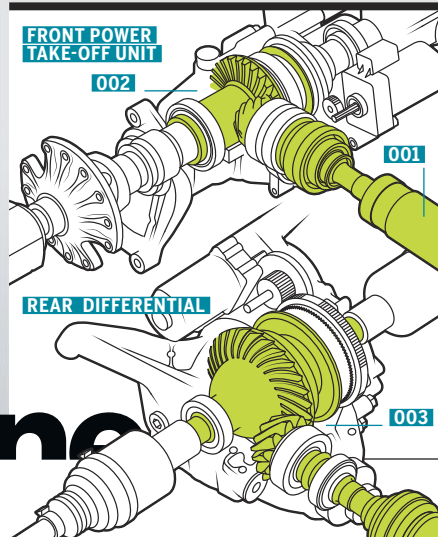
shift, the Compass won't rupture any spleens during a freeway pass, but the powertrain is a fine enough companion at lower paces. Relatively short lower gears in the available nine-speed automatic redeem the tweener SUV around town, while the Trailhawk's 20.4:1 overall first-gear ratio, knobby Falken WildPeak H/T tires, and off-road-tuned stability control enabled surprising off-road ability.

With a usable 8.5 inches of ground clearance (0.3 inch more than other all-wheel-drive Compass trims), the Trailhawk wears more-rugged bodywork that furnishes an impressive 30-degree approach angle, a 24-degree breakover angle, and a 34-degree departure angle. Skid plates and two tow hooks protruding from the front bumper—mean this Jeep is still a Jeep.

Ultimately, the new Compass is little more than a Renegade that's spent time at finishing school. Still, its attractive looks, comfortable accommodations, and refined on-road manners arguably make it the pick of Jeep's small-crossover-SUV litter.

[+] Handsome looks, composed ride, available manual transmission, roomy rear seat.

[-] Touchy brakes, recalcitrant transmission, lacks passing power.



tech highlight

PLANNING TO PLAN

The all-wheel-drive Compass's computer decides when to preemptively engage the ute's rear axle for extra traction by monitoring outside air temp, wheel-speed deltas, wiper use, and other factors. On warm, dry days, the driveline cuts fuel consumption 4 percent by idling the prop shaft (001) at the front power take-off unit (PTU, 002), and rear ring-and-pinion (003). When conditions threaten wheelslip, two clutches—a friction clutch in the rear diff and a toothed dog clutch in the PTU—swing into action, the rear clutch closing first to accelerate the prop shaft to match the speed of the transmission output shaft. Then the front dog clutch locks to send torque aft. This mechanical dance is an elegant means of avoiding the clunk of an unsynchronized clutch while also saving fuel when traction permits.

2017 JEEP COMPASS

VEHICLE TYPE: front-engine, front- or all-wheel-drive, 5-passenger, 4-door hatchback

BASE PRICE: \$21,000–\$23,000 (est)

ENGINE TYPE: SOHC 16-valve inline-4, aluminum block and head, port fuel injection

DISPLACEMENT: 144 cu in, 2360 cc

POWER: 180 hp @ 6400 rpm

TORQUE: 175 lb-ft @ 3900 rpm

TRANSMISSIONS: 6-speed manual,

6-speed automatic with manual shifting mode, 9-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 103.8 in

LENGTH: 173.0 in

WIDTH: 73.8 in

HEIGHT: 64.6 in

PASSENGER VOLUME: 100 cu ft

CARGO VOLUME: 27 cu ft

CURB WEIGHT: 3200–3650 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 9.3–9.8 sec

ZERO TO 100 MPH: 30.0–30.5 sec

1/4-MILE: 17.1–17.5 sec

TOP SPEED: 110 mph

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HWY: 22–25/20–23/

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TESTED

Appetite for Destruction

Can-Am's **Maverick X3** turns mud to joy. *by Josh Jacquot*

▼ **THE LIST OF TROUBLES** one forgets when airborne in a Can-Am Maverick X3 is significant. You'll not give a second thought to your cross-threaded relationships with the in-laws. Your latest flurry of poor life choices will fade to insignificance. You'll even dismiss the single inevitable event that accompanies every human flight: returning to Earth. Because, unlike as in any other vehicle, landing in this one utterly lacks consequence. Touching down in the X3 is a thing that happens in a heaven ruled by different physical laws. It's a perfect blue morning in the Dolomites, a lungful of crisp Yosemite Valley air, a freshly cut alfalfa field in southern Michigan.

We "tested" the \$25,749 X3 DS—yes, it's this or a new Mazda MX-5 Miata—in just such a field, airing out and pillowing in, scattering the moist terra firma wide and far with every shot at the throttle and filtering the grass through a toothy smile. The X3 is to Michigan loam what Kilauea is to Hawaiian magma. Big, heavy clumps of the stuff tore from the ground and showered down like sandbags filled with brownie mix. Bystanders beware.

Because side-by-side utility task vehicles (UTVs) have a justified reputation for sudden high-energy inversion, we tried mightily to keep the X3 upright. Go in with the notion that rolling is easy, and you'll be fine. Keeping the (slightly) cleaner side up is an exercise that turns enjoyable when one stops being afraid and learns the X3's nuances. You're quickest driving it in deep on the brakes. Trophy-truck-like internally bypassed dampers keep the wheels on the ground, even through a moonscape of braking bumps. But lift off the brakes com-

[+] Screw-physics (!) suspension, seriously quick, first fun CVT in history. [-] Lacks proper harnesses, still seeks inversion, Miata price tag.

pletely before turning. This isn't a car, and it doesn't slide like one. Ask too much of it at once, and it'll trip and tip. Separate, deliberate inputs and unloading the suspension at the right time are the keys to all-day alfalfa shredding.

The \$27,449 top-of-the-line X RS trim offers a more tip-resistant 72-inch width, with 22 inches of front- and 24 inches of rear-wheel travel. Our X DS mid-level rig was less radical at 64 inches wide, with 20 inches of travel, front and rear. Pre-load-adjustable, external-reservoir Fox shocks provide enough tuning knobs to easily screw up its factory-tuned perfection.

Fortunately for us, Can-Am took great measures to better X3 drivers' odds of staying upright. Relatively long and wide, with its seats placed low and semi-reclined in its tubular steel chassis, the buggy speaks with reasonable clarity through its electrically assisted three-mode power steering. Mostly it just grunts, saying things like, "Hang on, brother, I got this," while indiscriminately swallowing foot-deep holes and razing saplings mid-slide. A wheelbase longer than a Subaru BRZ's doesn't hurt.

And the power. Oh, the power. A turbocharged 899-cc Rotax three-cylinder whistles out 154 dirt-murdering horses through a CVT. It's a potent combo providing both quick response and uninterrupted thrust. There's no rear differential, ensuring that the rear wheels are always trying to pass the fronts. Should you prefer harder launches and quicker corner exits, a flick of a dash-mounted switch sends torque forward in a fixed 1:1 ratio with the rear axle. A hydraulically actuated clutch-type differential limits slip between the front wheels. In four-wheel drive, the 1597-pound X3 launches to 60 mph in 5.0 seconds on dirt and in a slightly faster 4.8 on the road.



2017 CAN-AM MAVERICK X3 X DS

VEHICLE TYPE: mid-engine, rear-/4-wheel-drive, 2-passenger, 2-door UTV
PRICE AS TESTED: \$25,749
BASE PRICE: \$25,749
ENGINE TYPE: turbocharged and intercooled DOHC 12-valve inline-3, aluminum block and head, port fuel injection
DISPLACEMENT: 55 cu in, 899 cc
POWER: 154 hp @ 7250 rpm
TORQUE: 112 lb-ft @ 6000 rpm
TRANSMISSION: continuously variable automatic
DIMENSIONS
WHEELBASE: 102.0 in
LENGTH: 131.0 in
WIDTH: 64.0 in
HEIGHT: 66.0 in
CURB WEIGHT: 1597 lb

C/D TEST RESULTS

ZERO TO 60 MPH: 4.8/5.0 sec (pavement/dirt)
TOP SPEED: 84 mph (governor limited)

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What I'd Do Differently

Peter Schreyer, 63

Hyundai-Kia's head of design tells us about his love of aircraft, the rude things people said about the Audi TT he designed, and why he always wears black.

► interview by MIKE DUFF



C/D: You grew up in Bavaria and your father owned a restaurant. Are you a good cook?

[PS:] I used to do the strudel and some other stuff. Even after I was already working as a junior designer for Audi, I would go back on weekends and bake the cakes.

■ Like many auto designers, you love airplanes. Why do the two things go together so often?

□ I think planes are the most beautiful machines; I have always loved them. There was a small air club near our house when I was a kid and they had an old English plane, a Percival Proctor. It was grounded for some reason, and they threw the wings away, and the fuselage with all its instruments ended up in our barn. I was six or seven and I had my own plane! I still have the propeller at home.

■ Audi was a very conservative brand when you joined it in 1978. Was it your first choice?

□ They were the ones offering an internship! When I started, it was almost embarrassing among designers to be at Audi; it was much more prestigious to be at Ford, even. But when I began they showed me a model of the Quattro, and it was going to have over 200 horsepower and all-wheel drive, which was unbelievable back then.

■ You designed the original Audi TT. Does it still stand out as a career highlight?

□ It was something special, definitely. I still have one. I will always have it. I definitely prefer it to the TTs that came after. When we showed the original concept, there were positive and negative reactions; a lot of people compared

it to this strange German car from the 1920s, the Hanomag Kommissbrot, which looked the same at both ends. Not everybody liked it.

■ What was your reaction when Kia approached you to become head of design?

□ I did not know much about Kia at the time, but the old Sorento had caught my eye. It was a good-looking car, and I had wondered who were the people behind it.

■ How did they persuade you to come to Korea?

□ I don't say persuade—they convinced me. We had meetings, and they told me they wanted to make a big step in design. I loved the idea of a white canvas, to build a brand almost from scratch. There were cars there already, of course, good cars, but in design terms they were very neutral. With a role like this, it's not only about money; no designer wants to work for an anonymous organization. The chemistry was right.

■ Was it a shock after 25-plus years at Audi and Volkswagen?

□ Of course, the Korean language and culture are very different, even the way people think and express things. When you are talking to a boss or a higher-up person, the word "no" doesn't exist, a problem doesn't exist. It's difficult for them to admit that anything's wrong; if they do, it will usually be at the end of the day. Everything is circumscribed. It's never, "The vice chairman doesn't like the wheels;" it's, "There is some opinion about the wheels."

■ You're now in charge of both Hyundai and Kia design, how do you distinguish them?

□ The battle is not between Kia and Hyundai, it's between us and everyone else: Chevrolet, Volkswagen, Ford. We did a design manifesto where we said Hyundai is like a river stone and Kia is more like a man-made object, a billiard ball.

■ How does car design stay relevant as we move toward click-and-go autonomy?

□ A car is an expression of who you are and your personality. That isn't going to change, in the same way we all dress differently. There's a lot I don't understand about some of these futuristic ideas—why is it every time there's an autonomous concept, there's a big screen in

front of the driver? What's wrong with windows? If you're being driven, aren't you going to want to look out, or look at your own screen, your phone, or whatever? Design always moves with technical progress; new technologies need designers to make them work.

■ Why do you always wear black suits and black glasses?

□ I've done this for maybe 20 years, but before then there are plenty of photographs of me with gold glasses and red shoes and so on. Many artists and architects do it—you don't want to be too colorful or distracting in front of the object you are showing. But it's also practical because I travel so much, I don't need to think, "What does the blue shirt go with?"

■ So what would you change about your life?

□ It's hard to say anything because I am happy with the way it went.

■ How about learning Korean? Would you tell your teenage self to do that?

□ It's sometimes a good thing not to speak the language because I'm not involved in so many meetings. There was a time at my old company when it seemed that 90 percent of the meetings were about cost and planning. Now I'm able to do what I'm supposed to be doing. ■

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